

Defense Science Board
Task Force

--on

**Force Protection in Urban
and Unconventional
Environments**



DISTRIBUTION STATEMENT A

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March 2006

Office of the Under Secretary of Defense
For Acquisition, Technology, and Logistics
Washington, D.C. 20301-3140

20060315 083

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REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)			2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
			March 2006	Final
4. TITLE AND SUBTITLE			5. FUNDING NUMBERS	
Force Protection in Urban and Unconventional Environments				
6. AUTHOR(S)				
Dr. Theodore Gold & GEN William Hartzog, USA (Ret) Task Force Co-Chairmen				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)			8. PERFORMING ORGANIZATION REPORT NUMBER	
Defense Science Board 3140 Defense Pentagon, Room 3C553 Washington, DC 20301-3140				
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
Defense Science Board 3140 Defense Pentagon, Room 3C553 Washington, DC 20301-3140				
11. SUPPLEMENTARY NOTES A: Open Distribution				
12a. DISTRIBUTION AVAILABILITY STATEMENT			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words)				
14. SUBJECT TERMS			15. NUMBER OF PAGES 55	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT	
Unclassified	Unclassified			



OFFICE OF THE SECRETARY OF DEFENSE

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WASHINGTON, DC 20301-3140

DEFENSE SCIENCE
BOARD

MEMORANDUM TO THE UNDER SECRETARY OF DEFENSE FOR
ACQUISITION, TECHNOLOGY AND LOGISTICS

SUBJECT: Report of the Defense Science Board Task Force on Force Protection in
Urban and Unconventional Environments

I am pleased to forward the final report of the Defense Science Board task force on Force Protection in Urban and Unconventional Environments. This task force was asked by the Under Secretary for Acquisition, Technology and Logistics and the Chairman of the Joint Chiefs of Staff to evaluate force protection in the context of post major combat operations that have been conducted in Iraq and Afghanistan. By focusing on the forces on the ground in such operations, the current task force's report complements the 2004 Defense Science Board Report on Transition to and from Hostilities and the more recent Institutionalizing Stability Operations within the Department of Defense.

The task force's report emphasizes that protecting the force in these types of operations depends on much more than defensive measures and involves information, offensive actions, and winning hearts and minds. The report focuses on the critical role of junior officers, NCOs and the small units they command. They are the ones in contact with the local populace and their tactical actions have strategic consequences. The thrust of the task force's recommendations is to make them better prepared and give them better tools to meet the challenges of the future security environment.

The adversaries that U.S. forces face in these operations are demonstrating their adaptability. Thus, the task force also urges DoD to accelerate progress toward its declared aim of becoming an organization that continually adapts to how it approaches and confront challenges.

To accomplish these goals the task force offers recommendations about training, leader development, professional military education, information operations, tactical intelligence, red teaming, learning lessons, technology and joint urban operations.

I endorse the task force's recommendations and encourage you to review the report.

William Schneider, Jr.
Chairman

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DEFENSE SCIENCE
BOARD

MEMORANDUM FOR CHAIRMAN, DEFENSE SCIENCE BOARD

SUBJECT: Report of the Defense Science Board Task Force on Force Protection in Urban and Unconventional Environments

This Defense Science Board report recommends improvements for protecting military forces engaged in counter insurgency, stability and related operations- the type of operations that the U.S. military will be occupied with for years to come. These protracted operations have no front lines and entail U.S. forces distributed and intermingled within the local populace; the same populace that adaptive enemies attempt to hide within.

While its subject is force protection, the task force has little to say about armor, fences, portals and other defensive measures. Not that these are unimportant. Indeed they are vital. However, such defensive measures are only one ingredient of force protection. At least as important are offensive mindset, information and "winning trust, hearts and minds." It is these other elements of force protection that provides the focus of this report.

There are two major themes: empowering the "strategic corporal" and transforming the Department of Defense into an adaptive learning organization

Stability and counterinsurgency operations place huge burdens on junior officers, non-commissioned officers (NCOs), and the units they command. Today they are making decisions traditionally considered far above their pay grades. For these missions, small unit performance represents the key to success since tactical actions inevitably have strategic implications.

Success in these type of operations also requires that DoD adapt to, and indeed anticipate, rapidly changing circumstances and the action of dangerous adversaries who themselves are highly adaptable. U.S. military forces are making progress toward becoming such a learning organization; much more needs to be done.

Technology and materiel are important for force protection. However, they will remain supporting actors. The human dimension habitually is the dominant factor in war and will continue to be in future stability and counterinsurgency operations. Within the Pentagon there is often excessive focus on materiel as "the solution" and technology applied solely to materiel development. In contrast, this task force has centered its attention on training, leader development, professional military education, and how those

factors contribute to enhancing small unit effectiveness, cultural awareness, tactical intelligence, information operations, and rapid learning and sharing of experiences.

Training has been a powerful asymmetric advantage of U.S. military forces. Members of the task force were impressed how the training communities in the Army and Marine Corps are adapting to meet the new challenges of the campaigns in Iraq and elsewhere. However, not nearly enough resources are devoted to training which doesn't compete very effectively against materiel in budget battles.

An increased emphasis on junior officer/non-commissioned officer (NCO) training and leader development requires that the standards and quality now found in the centralized training facilities be brought to home station training. Technology can play a significant role here, contributing to distance learning, simulation and synthetic environments. The report recommends a major technology effort to enhance training and leader development. Also needed are more realistic depiction of the civilian environment and further enhancements of the centralized training facilities encompassing, *inter alia*, extensive urban environs and ways to measure combined kinetic and non-kinetic operations.

Central to these non-kinetic operations is the kind of information operations that commanders at all levels are inventing to influence the local populace and are integrating into their overall operations. These are a form of strategic communication, since U.S. forces on the ground are the face of America to the indigenous population

However, official definitions of information operations give scant attention to these influence operations, instead put most of the emphasis on computer and electronic related operations directed against the enemy. Regardless which term is used, or how it is defined, there is shortfall in the capability of forces in the field to influence, in a positive way, indigenous populations. Information operations and public diplomacy and public affairs demand coherent, consistent messages, which rest on the same philosophical, ideological, and political principles.

This report recommends that the Secretary of Defense create a fast-track team to address the serious problems that afflict U.S. attempts to conduct information and influence operations. It should propose organizational, doctrinal and operational changes to clarify definitions, responsibilities, purposes, missions and assignments. The team should include officers and NCOs with recent and diverse command and information operations experience. In a larger sense, DoD should recognize the strategic importance of combat-experienced officers and NCO's as agents of change, and assign them accordingly.

In addition, the task force calls for

- Reinvigorating professional military education,
- Making all source intelligence much more accessible at lower tactical levels,
- Establishing more vigorous red teaming activities,

- Creating integrated teams of warfighters, analysts and technologists to support operations and lessons learned activities,
- Introducing prototypes more frequently into unit rotational training and establishing prototyping capabilities at the operational commands in order to insert new capabilities into operations more rapidly
- Changing the focus of JFCOM's Joint Urban Operations Office

A great strength of America's operational forces is the Services' junior officers and NCO's. The thrust of the task force's recommendations is to make them better prepared and give them better tools to meet the challenges of the future security environment. Small units and their leaders are strategic assets, and the Department should resource them accordingly.

The members of the task force are greatly appreciative of the important contributions of the government advisors, LTC Scott Dolgoff (DSB Office representative), Todd Chappell (Executive Secretary) and Julie Evans and the other support staff.

Dr. Theodore Gold
Dr. Theodore Gold
Co-Chair

William W. Hartzog
General William Hartzog, USA (Ret)
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SUMMARY OF FINDINGS AND RECOMMENDATIONS

The Under Secretary for Acquisition, Technology, and Logistics (USD [AT&L]), the Chairman of the Joint Chiefs of Staff, and the Director, Defense Research and Engineering requested the Defense Science Board (DSB) to form a task force to evaluate force protection in the context of post-major combat operations that have been conducted in Iraq and Afghanistan. The task force has assumed that such operations include stability, security, transition, and reconstruction (SSTR); counterinsurgency; and related operations that can occur in situations other than post-major combat. Attributes that contribute to the challenge of these missions include:

- Multiple objectives, some in tension with others
- Military intermingled with civilians
- Adaptive adversaries hidden within the populace
- No front lines – all forces at risk
- Protracted operations lasting for years

As directed, the task force's focus was not on short-term fixes, but rather on preparing the Department to meet future challenges. Discussions with active duty officers with recent operational experience in Iraq have had a considerable effect on its findings. Its members also learned from visits to U.S. Army and Marine Corps training sites and from a variety of other presentations, including those given by British and Israeli officers about their experiences with force protection in similar operations.

Force protection is not an end in itself. Furthermore, protecting the force is not only, or even mainly, about defensive measures. To the extent that "force protection" connotes bunkers and barbed wire, it is not a helpful term. The task force did not attempt to define force protection, but heard and agreed that protecting the force depends on information, an offensive mindset, winning trust, hearts and minds, as well as defensive measures.

One division commander emphasized that providing services – sewer, water, electricity, trash (SWET) – was his most effective force protection measure. In such circumstances, to paraphrase a chart from the National Training Center, money, food, water, medicine, employment, recognition, and respect are all ammunition (and armor). Ultimately, protecting the force while accomplishing the mission depends on all of these elements guided by realistic objectives and sound strategy, as well as sufficient boots on the ground.

This report offers two major themes:

(1) Empower the “strategic corporal.” The nature of SSTR operations places enormous burdens on junior officers, non-commissioned officers (NCOs), and the units they command. At present, they must make decisions traditionally thought of as far above their pay grades. On a daily basis they are demonstrating how capable they are. The U.S. military will have to use them to the fullest extent of their potential if the United States is to meet the challenges that will confront it in the course of coming decades.

For these missions, small unit performance represents the key to success. Tactical actions will inevitably have strategic implications. If there is to be one message that the Department’s leadership should take away from this report, it is that small units and their leaders are strategic assets, and the Department should resource them accordingly. Increased investment here can have high payoff in new capabilities.

(2) Accelerate the transformation of the Department of Defense to an adaptive learning organization. A learning organization continuously monitors and objectively assesses its performance as well as that of its adversaries and devises and rapidly implements new approaches when the old ones will no longer work. The goal of becoming a learning organization is explicit in the National Defense Strategy of the United States of America (March 2005), which calls for “continuous transformation” and states: “We will continually adapt how we approach and confront challenges, conduct business, and work with others.” The rapid adaptation of the Army’s and the

Marine Corps' training capabilities suggests attributes of learning organizations. On the other hand, the attributes of an effective learning organization are less evident in the Department's experience of the past four years with information operations.

In the major combat phase of Operation Iraqi Freedom (OIF), U.S. forces achieved the twin goals of accomplishing the mission and protecting the force through an interdependent joint force – enabled by speed, stealth, and precision – employing multiple, simultaneous lines of attack to outstrip their Iraqi opponents' ability to react.

In counterinsurgency operations, U.S. forces could achieve these goals by becoming a force:

- Agile enough to present a constantly changing face to the enemy,
- Adaptable enough to learn faster than the enemy, and
- Culturally sensitive enough to provide reassurance, services, and protection to the civilian population, as well as training and mentoring to the indigenous security forces.

Can the American military gain such attributes and still maintain the ability to conduct conventional military operations? Only if the Department is willing to make major changes in some of the basic enablers of mission accomplishment/force protection in SSTR operations. These enablers include training, leader development, professional military education (PME), intelligence, information operations (IO) and rapid learning and sharing of best practices. In some of these areas positive change is already underway.

Technology and materiel can contribute to enhanced force protection in SSTR and counterinsurgency operations and this report identifies some of these opportunities. However, they will not provide "silver bullets". The human dimension habitually is the dominant factor in war. It certainly will continue to be in future SSTR and counterinsurgency operations. Thus the task force has centered its attention on the enablers listed in the previous paragraph particularly how these contribute to small unit effectiveness and the transformation of the Department of Defense (DoD) into an adaptive

learning organization. In addition, as directed by its terms of reference, the task force reviewed the Joint Urban Operations Activity (JUOA) at Joint Forces Command (JFCOM).

Training and Leader Development

In these protracted operations, proper training can have a significant impact sooner than the other elements of doctrine, organization, training, materiel, leadership and education, personnel and facilities (DOTMLPF). Training has been a significant asymmetric advantage of U.S. military forces over the course of the past two decades.

A training revolution, first initiated by the Air Force and Navy for aerial combat, was applied to land combat by the Army beginning in the late 1970s. Large training facilities, explicit conditions and standards, world class opposition forces (OPFOR), the use of observers/controllers and, not least of all, after-action reviews that provided open and honest critiques characterized this revolution.

Since then, and until recently, these training capabilities have largely focused on the upper echelons of high intensity fighting. The Joint Readiness Training Center (JRTC), with its focus on light infantry operations, has been an exception. Although the Army trains primarily for major combat operations, it has spent most of its operational time over the past decade in counterinsurgency and SSTR operations. Nevertheless, the members of the task force were uniformly impressed with the strides that are being made in the Army and Marine Corps training centers to address the new security environment that has characterized on-going operations in Iraq. Kudos are due for the progress achieved, but it is not sufficient.

A second revolution is needed. The goal should be to preserve the strengths of the first training revolution, while building on the current training adaptations including those ongoing at the National Training Center (NTC), Marine Corps Twenty-nine Palms Training Center (29 Palms), and the JRTC.

This second training revolution would place special emphasis on junior officer/NCO training and leader development. It would greatly increase the scope of home station training and provide more realistic depiction of the civilian environment and ways to measure combined kinetic and non-kinetic operations. It would also enhance the centralized training facilities to include more extensive urban environs.

Professional Military Education

The challenges of the 21st century demand that senior officers be more thoroughly educated and culturally attuned in command positions. In some areas, the Department is making a start in the right direction with its requirement that graduates of the military academies and those on Reserve Officer Training Corps (ROTC) scholarships attain higher levels of language proficiency. However, the Department and the services need to reform the personnel systems so that fast track officers have the opportunity to attend the most prestigious graduate schools in the world to obtain master's degrees and doctorates in subjects like area studies, languages, cultural studies, and military history.

Perhaps the most important step in improving the ability of future leaders to understand the broader issues involved in force protection is to afford greater exposure to other cultures and nations early in their careers. Additional opportunities for advisory tours, exchange tours, and foreign study would serve to provide future leaders with the skills to recognize the cultural gulfs and historical frameworks that they and their subordinates will confront.

None of this will be easy, and it will most probably demand a rethinking of the military career with an emphasis on more officers serving thirty years than is currently the case. There must not only be an emphasis on cultural understanding and awareness, but a real symbiosis between training, education and experience. Only by such an emphasis can learning in the school house connect to experience in the real world.

Moreover, the ground-centric nature of SSTR operations will also demand changes to the training and intellectual preparation of Navy and Air Force officers if they are to be effective participants in joint task force headquarters conducting these types of operations.

Information Operations

Commanders at all levels in the field are inventing “information operations” directed at the local populace and integrating these non-kinetic methods into their operations. However, they need more help in both message and media. U.S. Soldiers and Marines on the ground daily are conducting strategic communication. They represent the face of America to local populace. But, they need more cultural awareness and language skills.

However, current IO definitions, policy and doctrine don’t adequately address this kind of “influence operations.” Instead they focus on actions to affect adversary information and information systems while defending one’s own. Psychological operations (PSYOPS) is an exception but is limited in quantity and skill set and doesn’t adequately reach the lower levels of the combat force who need their skills. Influence operations, public diplomacy and public affairs demand coherent, consistent messages resting on the same philosophical, ideological and political principles.

Influence operations are too pervasive a tool to be left to specialists and must be emphasized in leader development, training and education. Tactical level influence operations best practices should be captured and disseminated.

Tactical Intelligence and Red Teaming

There are important roles for surveillance assets and other intelligence tools, but human intelligence (HUMINT) is the most important contributor to tactical intelligence in SSTR and counterinsurgency operations. HUMINT is also fragile and deception-prone. Building strong relations with the local population is essential to gaining trusted human intelligence. Everyone in the unit must become a collector, not just intelligence and civil affairs

personnel. Knowledge of the local culture, as well as language skills, are critical enablers to establishing relationships and gaining information.

Pattern recognition and link analysis conducted at all levels, down to the individual Soldier and Marine, are already part of the current training regime. This is an area where technology could contribute to enabling more effective tools. The efforts at the U.S. Army's Intelligence and Security Command (INSCOM) and elsewhere to enhance the collection and value of intelligence work needs to be accelerated, especially making intelligence much more readily available at the lower tactical levels.

Red teaming can be a powerful tool for an adaptive learning organization. When done right, it will help anticipate initiatives and responses by adversary groups and thus complement evidentiary-based intelligence. However, for a variety of reasons, effective red teaming is not commonplace.¹

Finding appropriate personnel is one challenge, since the red team will need to emulate the cultural predilections, motivations, objectives, internal planning, technical and operational capabilities, and decision processes of potential adversary groups. The Army has recently initiated an effort to develop more effective red teamers. Another challenge is providing sufficient independence for the red team, while still ensuring its products have ample opportunity to inform operational and investment decisions.

Rapid Learning and Sharing of Experience

SSTR and counterinsurgency missions place great demands on learning lessons. Adversaries seem to change tactics, techniques and procedures (TTPs) almost daily. U.S. forces must operate in complex, cultural, political, infrastructure and physical environments. These environments can be equally challenging, but different, in the next

1. A more complete discussion of the challenges of red teaming is provided in the report of the DSB Task Force on "The Role and Status of DoD Red Teaming Activities" (Sept, 2003).

village or town. Traditional lessons learned processes won't work here. Needed are new ideas and new models. The pace of change in theater makes it impossible for study groups like this one (indeed the Pentagon itself) to keep up. In no area is this truer than how lessons are being learned during operations.

Effective force protection depends on being able to capture and disseminate locale dependent TTP best practices extremely rapidly among the lowest tactical levels. It also requires that lessons be promulgated rapidly to the highest levels in order to inform decisions on strategy, organization, training, technology initiatives and the like.

A new model for learning lessons is evolving in the field enabled by the dramatic growth of *networking*. This is the power of network-centric ideas: network as a verb. Both vertical and horizontal networking is occurring within and outside the chain of command. An example of the first has been the First Cavalry Division's creation of its own internet, (CAVNET) and its use of the Defense Advanced Research Projects Agency's (DARPA) Command Post of the Future.

Companycommand.com and platoonleader.org are examples of horizontal networking initiatives originally begun outside of formal channels. Also happening in the field are collaboratively derived and validated lessons learned and concepts. There is, as a result, continuous "experimentation," rapid dissemination, and adjustment at the small unit leader level.

An approach like JFCOM's OIF Lessons Learned activity, which embeds analysts in headquarters engaged in ongoing operations, also has a role here. In addition to capturing lessons on the spot, it provides reach back help in resolving issues and, in some cases, turns lessons observed into immediate remedial action.

The Role for Technology

The extended nature of SSTR operations presents challenges and opportunities for inserting new technology-enabled capabilities directly into the operations. The challenge is that the introduction of technology must be closely integrated within rapidly evolving

concepts, TTPs, and training. Current processes are not up to the task of providing timely insertion.

Technology not only enhances training at the combat training centers (CTCs), but can be a powerful enabler of another training revolution. Most significantly it could help bring CTC-like standards to training units at their home stations.

Joint Urban Operations Activity at Joint Forces Command

The Joint Urban Operations (JUO) leadership is doing a good job in difficult circumstances. The task force was particularly impressed with the tools developed for the Urban Resolve experiment and JFCOM's efforts to extend the utility of these experimental tools to mission rehearsal, training, and operational opportunities.

However, the security situation has changed substantially since the JUOA was conceived and created. Then there was a lack of interest in urban operations within parts of the Department. ("We don't do cities.") Now it is no longer necessary to have an advocate for the importance of urban operations. There are many real world urban operations, and most of the learning is occurring in theater – particularly by junior officers in command positions. Thus, the executive agent role as originally envisioned should be reassessed. Furthermore, a significant increase in staff and resources would be required in order for the JUOA serve as an effective executor of a JUO master plan.

An alternative to JUOA being "in charge" of a comprehensive master plan is have the JUOA be an advocate and executor for a few important needs. One of these is sponsoring a few joint urban experiments and training events per year. Another is helping integrate air and space assets of all the services and defense agencies into joint urban operations and thus strengthening the vertical dimension of these types of operations.

RECOMMENDATIONS

The task force's recommendations will protect the force better by substantially enhancing the capability of small units to conduct counterinsurgency and SSTR operations, and accelerating DoD's transformation into an adaptive learning organization.

The task force focused on several enablers of these mutually supporting goals: training, leader development, professional military education, information/influence operations, tactical intelligence, red-teaming, and the rapid learning and sharing of operational lessons. These are not the only critical enablers but were chosen because they are either not getting needed resources or attention, or there remain obstacles (bureaucratic and other) to progress. All these recommendations are directed at the Secretary of Defense and the Chairman, Joint Chiefs of Staff. In some cases an implementation lead is suggested.

Recommendation 1: Training, Leader Development, and Professional Military Education

- **Make training, leader development, and PME (with special attention to Junior Officers and NCOs) much higher priority elements of force transformation.** This will involve substantially more resources for training and will demand that senior Office of the Secretary of Defense (OSD) and Joint Staff officials work closely with Service Chiefs to develop and execute plans. Training and PME generally have not competed well with the acquisition community for dollars. The addition of several hundreds of millions of dollars to enhance training is one of the highest payoff investments that DoD can make to protect the force in SSTR and counterinsurgency operations. Targets for such investment (some of which is already underway, especially in the Army and Marine Corps) include:

- Recognize the strategic importance of combat-experienced junior officers and NCOs as agents of change, and assign them accordingly.**
- Expand and accelerate efforts to bring CTC-class training standards to units at their home stations.** This would involve the creation of deployable training teams, mobile simulators (for unconventional warfare small unit training), and greater exploitation of tools for distance learning. As part of this effort, create a major initiative to develop simulation tools and synthetic environments to support home-station training and junior officer leader development. Provide continual enrichment to these tools and environments by incorporating lessons learned and experiences from returning junior officers and NCOs.
- Accelerate and expand the adaptation ongoing at the NTC, JRTC, and 29 Palms. There is much to be done to provide:**
 - Ways to assess combined kinetic and non-kinetic operations, together with metrics,
 - Enhanced instrumentation,
 - World class counterinsurgency OPFOR,
 - More extensive and realistic populace play,
 - More insertion of new technology/capabilities into training regimens,
 - Greater capability to support training elsewhere including in-theater,
 - Training rotations as an opportunity to facilitate unit transitions and handover,
 - Learning of basic language skills,
 - More opportunities for joint training, and

- More involvement of other U.S. Government agencies, international partners, and non-government organizations (NGOs).
- **Greatly expand training environs for urban operations.**
 - Create urban training environments (physical, infrastructure, cultural, adversarial) large enough to "swallow" a battalion.
- **Reinvigorate the role of PME in developing more thoroughly educated and culturally attuned officers in command positions.**
 - Insure that officers on the fast track to command positions have the opportunity for exposure to other cultures early in their careers through advisory tours, exchange tours, and foreign study.
 - Provide more opportunities for advanced degrees in area and cultural studies, languages, and military history at the most prestigious universities in the world and ensure that such study is considered "career enhancing" by promotion boards.
- **Task the services and JFCOM to provide a plan in six months detailing the improvements and means needed to underwrite a second education and training revolution accounting for joint full spectrum operations (combat, counterinsurgency, SSTR, peacekeeping, and humanitarian presence).**

**Recommendations 2 & 3:
Information Operations**

- **Charter a fast-track team to address the serious problems that afflict U.S. attempts to conduct information/ influence operations.**

- The team should recommend organizational, doctrinal, and operational changes to clarify definitions, responsibilities, purposes, missions, and assignments with particular emphasis on those information operations conducted by U.S. forces in theater largely directed at the local populace.
- Appoint an OIF-experienced and successful land force commander as the team leader with a civilian deputy from Public Affairs. Include in the team hand-picked officers and NCOs with diverse influence/IO experience, commanders who have successfully integrated these operations into a larger campaign and experts from the private sector. Interim results should be available within 60 days and final report in 120 days.
- **Rapidly implement section 5.5.2 of DoD Directive 3000.05 on Military Support for Stability, Security, Transition, and Reconstruction (SSTR) Operations since money is ammunition:** “Institutionalize procedures to achieve rapid distribution of funding, goods, and services, with appropriate accountability safeguards, by U.S. commanders deployed in foreign countries in support of stability operations.”

**Recommendations 4 & 5:
Tactical Intelligence and Red Teaming**

- **Provide much easier access to intelligence at tactical levels (battalions and below).** Accelerate the efforts at the Army’s INSCOM and elsewhere to provide this capability along with the collaborative environment that fosters sharing of information and knowledge. This environment must embrace the critical role of the lower tactical levels as collectors as well as customers of intelligence. These capabilities should be packaged into a joint tool set with the corresponding training support and be SIPRNET-compatible at tactical levels.

- **Establish aggressive red teaming** to emulate the cultural predilections, motivations, objectives, internal planning, technical and operational capabilities, and decision processes of potential adversary groups and uncommitted populace.
 - Embed the red teaming in a process wherein senior decision makers and commanders use its products to inform operations, inform investment decisions, operations and intelligence collection.
 - Consider extending to other DoD organizations the Army's recent initiative to develop more proficient red teamers.

Vice Chairman, Joint Chiefs of Staff (VCJCS), Under Secretary of Defense Policy (USD [P]) and USD (AT&L) could be designated as leads.

Recommendation 6: Rapid Learning and Sharing of Experience

- **Evolve a new approach exploiting the networking innovations going on in the field, the considered assignments of military personnel returning from theater and the experience of JFCOM's OIF Lessons Learned activity. This will involve, inter alia.**
 - Embedding more observers and analysts into ongoing operations at tactical levels, and
 - Creating integrated teams of warfighters, intelligence analysts, operational analysts, and technologists that can rapidly perform the operations analyses needed to help turn observations (data) into lessons (knowledge) into actions (lessons learned).²

The verb evolve is chosen with care because the lessons learned process must itself be the subject of constant inquiry and adaptation.

2. The DSB Improvised Explosive Devices (IED) Task Force running in parallel with this task force provides a similar recommendation for such integrated teams.

Making all this happen will require the Services, Regional Combatant Commands, JFCOM, OSD and the Joint Staff all working together.

Recommendations 7 & 8: The Role of Technology

- **Initiate a major technology effort aimed at breakthrough enhancements to training and leader development with special attention to junior officers and NCOs, home-station training and non-kinetic operations. (Build on efforts currently underway in DARPA and the services).**
- **Provide for more rapid insertion of new capabilities to include enhanced language translators into the field by inserting more prototypes into unit rotational training, and by establishing a prototyping capability – with operational analysis and system engineering support – at the operational commands.**

USD (AT&L) and USD (Personnel & Readiness) should work closely with the Services and Combatant Commands to make these happen.

Recommendation 9: Joint Urban Operations Activity at Joint Forces Command

- **Focus JFCOM's Joint Urban Operations Office on just a few critical needs rather than attempt to create and oversee a comprehensive master plan. The task force suggests these needs are:**
 - Strengthening the vertical dimension of urban operations (and making them more joint) by orchestrating substantially increased contribution from the Air Force and Navy,
 - Developing and promulgating lessons from junior officers (working closely with the service lessons learned activities), and

- Sponsoring a few major JUO training/experiment events a year.

OVERARCHING RECOMMENDATION

Counterinsurgency and SSTR operations put great demands on small units and their leaders. Every reasonable step should be taken to push decision-making and tactical control to the lowest level equipped to exercise it and, for the future, to push this decision making and control to even lower levels through better, more relevant, and more innovative training, preparation, and equipage. A great strength of America's operational forces is the services' junior officers and NCOs. The thrust of the task force's recommendations is to make them better prepared and give them better tools to meet the challenges of the future security environment.

The focus on small unit operations in this report is not meant to diminish the role of the operational levels of command. Indeed, the training, leader development and PME recommendations in this report will better prepare the junior officer commanders to ultimately take on the responsibilities of operational-level command in these challenging missions.

INTRODUCTION

The charge to this Defense Science Board (DSB) task force was to "recommend technological and operational art changes across all ... DOTMLPF and policy ... to improve the security and force protection of military and civilian personnel conducting post major combat operations to achieve campaign and strategic objectives." The DSB 2004 Summer Study, "Transition to and from Hostilities," has provided comprehensive coverage of the challenges involved in SSTR operations. A separate DSB task force working with this task force has examined the IED threat.

A recurrent theme throughout this report is the importance of small unit excellence and leadership for the achievement of successful force protection. The "strategic corporal" of the twenty-first century will have important implications for the priorities that the Department and the services establish in the day-to-day business of preparing military units for the missions they will confront.

The next section of this report provides the framework for thinking about the strategic, operational, and tactical issues that will affect the problems involved in force protection. This will be followed by sections on training, professional military education, cultural understanding, IO, intelligence and red teaming, rapid learning and sharing of experience, technology, and the Joint Urban Operations Activity.

Appendix A provides the terms of reference for this report and Appendix B lists the members of and government advisors to the task force. Appendix C provides a list of presentations, discussions, and visits the task force covered over the course of its meetings. To a considerable extent, the presentations provided by active duty officers with recent operational experience in Iraq have shaped the task force's findings. Visits to U.S. Army and Marine Corps training sites, as well as, a variety of presentations to the task force that included commentaries on the problems confronted by British and Israeli officers in force protection in Northern Ireland and the

occupied territories, respectively, have also influenced the task force's thinking on the subject.

THE FUTURE OF FORCE PROTECTION

In the coming century, U.S. military forces will find themselves involved in interventions in troubled areas of the world. Those interventions will range from full-scale conventional war, to SSTR and counterinsurgency operations that involve serious fighting, to peace enforcement operations, to peacekeeping. In the largest sense, the future demands that the United States and its military will confront appear even more uncertain than they have in the past. Thus, adaptability to new and surprising challenges will be a crucial element to success at the tactical, operational, and even the strategic levels. Exacerbating these difficulties will be the fact that future opponents of the United States are monitoring the events in Iraq, with the result that future interventions are going to demand a sensible and realistic strategic framework. The end state of such interventions may well remain unpredictable, but the assessment of potential risks before intervention must include a realistic balance of ends, means, as well as, the costs and difficulties involved in long-term force protection.

Force protection in unconventional and urban environments is much more dynamic with a broader range of challenges than those involved in conventional warfare. Inevitably, force protection will find itself inextricably linked to a combination of political, economic and strategic factors. These include the political objectives of the United States, the culture and religion of the area in which U.S. forces find themselves involved, and the stability and homogeneity of the society, as well as the state of the existing economy and infrastructure.

Achieving the mission and protecting the force in such environments will require significant tailoring of the military forces involved. At the operational level it will require detailed planning and exercises for SSTR operations in advance (see 2004 DSB Summer

Study) for countries and regions that appear ripe for intervention and are important to American interests. Moreover, such planning efforts must be dynamic and explicitly address the shaping of the post-major conflict environment (during military operations, transition, and post-conflict). They need to address the potential for the growth of likely unconventional adversaries including the evolving effect of the ongoing operations on the culture and religion, the society, the economy and infrastructure. Major military and SSTR operations likely will occur simultaneously, and planning must inevitably see them holistically and as a coherent and connected, but ever changing, whole.

Force protection is not an end in itself, and thus the members of the task force have examined it within the context of the range of missions and the problems associated with adaptation to cultural and political contexts. Throughout the range of military operations, U.S. commanders have confronted, and will continue to confront, the dual responsibilities of (1) accomplishing the mission and (2) ensuring the safety of those under their command, while continually making decisions about the risks to each. These two responsibilities are inextricably linked, because the political objectives, for which the United States government has and will employ its military forces, depends on the support of U.S. citizens for success. Consequently, the safety of its men and women in uniform will remain a primary concern of a democratic state, whatever the military or political circumstances. Moreover, casualties suffered in longer endeavors when the mission is more open-ended and the enemy more elusive can have a greater political impact than casualties suffered in those operations where the U.S. military is pursuing a defined mission and a clear opponent.

As a result, there is both tension and synergy between these responsibilities. Force protection is crucial to the creation of the circumstances that facilitate military forces executing their operational missions. It may well be – as was the case during the conventional military operations in April 2003 – that exposing both combat and supporting forces to greater risk will result in a more rapid achievement of the mission and thus fewer casualties in the long run. However, public support has consistently proven crucial to

INTRODUCTION

success in war; and significant casualties will inevitably affect that support.

In the widest sense, force protection involves the protection to the extent possible of U.S. military forces in all environments from bases in North America to their employment in combat. It also requires the protection of assets in non-combat areas from attacks, such as that which seriously damaged the USS Cole. Nevertheless, force protection must not interfere with the accomplishment of the mission or negatively impact on the political ties that bind the American people to their military. Above all it must not lead to a garrison mentality or to a belief that hunkering down behind concertina wire and armor represents a serious effort to achieve mission completion. To do so would invariably rob U.S. forces of the ability to shape their battlespace and understand how the enemy is operating. It would rob them of the capacity to perform effective counterinsurgency operations, which inevitably must involve operating in close contact with the civilian population.

The realities of the challenges presented by force protection that this task force has addressed have the following attributes:

- *Military forces, enemy forces, and civilians in close proximity.* Indeed the mission may involve protection of the civilian population.
- *Uncertainty about where, or even who, the enemy is.* America's future opponents will inevitably hide in populations that include their supporters, the intimidated, and the wavering.
- *Adaptive, resourceful, and committed adversaries.* Future opponents will prove to be effective learning organizations (which is what U.S. forces are already seeing in Iraq).
- *Distributed operations.* Ironically, in view of much of American defense writings over the past decade, opponents have been successfully employing the concept of distributed operations. When there are no front lines, all forces are at risk and logistic convoys, like merchant ship convoys in World War II, become "movements to contact," or are targets for loosely organized enemy actions.

- *Protracted operations.* Operations, such as the current SSTR operations in Afghanistan and Iraq, can last for decades.
- *Future operations will inevitably call on the U.S. military to execute multiple, simultaneous, and co-located missions.* These may include not only security, but governance, humanitarian, reconstruction, and training missions.
- *The objective will be to transition governing responsibilities back to local control as soon as possible.* Nevertheless, turnkey transitions are unlikely and the long-term commitment of U.S. advisors will be the norm.
- *Interagency considerations.* The Department will be called upon to integrate its military forces with other instruments of national power and non governmental actors even more closely than during major combat operations, or as happened in Iraq, provide services that other government agencies are unprepared to make available.
- *Coalition considerations.* The importance of allied military forces and their intelligence organizations may prove crucial to the protection of U.S. forces, particularly if they are more familiar with the area, culture, and politics, where military operations are taking place.

Based on what the task force heard from those with whom it interacted – as well as its own experiences – its members believe that “force protection” is not a helpful term. It inevitably connotes bunkers and barbed wire. Instead of confining itself to such a narrow conception of the problem, the task force focused on ways to maximize mission effectiveness, while minimizing casualties. In the major combat phase of Operation Iraqi Freedom, U.S. military forces achieved their operational and tactical goals by parallel and simultaneous application of effects, enabled by speed, stealth, precision, and a willingness to take acceptable risks in regard to force protection. The resulting set of capabilities allowed U.S. forces to outstrip the ability of its Iraqi military opponent to react. In effect, the result was a replication of the German blitzkrieg victory over the French in 1940, except with far fewer casualties.

The visual and psychological impact of the stunning American victory over the Iraqi military in a matter of a few weeks makes it unlikely that future opponents will attempt to fight a conventional war against the U.S. military. A crucial enabler to the success of U.S. forces in March and April 2003 was the ability of support forces to defend themselves against the attacks launched by Saddam's *fedayeen*. Nevertheless, the fate of the 507th Maintenance Company underlines the importance of force protection for all U.S. forces, non-combat and combat, even when a major conventional campaign is underway – especially given the current emphasis on rapid, distributed operations.

Future opponents may choose to fight insurgent wars of attrition aimed at exhausting U.S. political patience and willingness to continue the struggle. That is clearly what the insurgents in Iraq are waging at present, and many of America's opponents, especially in the Middle East, are closely watching what is transpiring. In counterinsurgency operations, the U.S. military will only achieve the nation's goals by becoming a force with the following attributes:

- Agile enough to present a constantly changing face to the enemy,
- Adaptable enough to learn faster than an enemy, and
- Culturally attuned and sensitive enough to provide reassurance, services, and protection to the civilian population and training and mentoring to the indigenous security forces.

One of the larger questions that confront U.S. military leaders at present is whether the buildup of skills necessary for SSTR operations over the long haul will result in the atrophy of those required for major conventional operations. U.S. experiences in both Iraq and Afghanistan suggest that considerable work remains to be done in preparing future forces for the kinds of situations they will likely confront. The Department and the services need to make major changes in how U.S. forces plan, train, educate, and approach intelligence and information operations – all of which represent essential elements in successful force protection. Greater attention

needs to be given to the non-kinetic operations which play such important roles in these situations.

Such changes will have to come within the larger framework of how the United States military prepares its forces to handle the problems involved in SSTR operations. Nevertheless, ongoing operations in Iraq and Afghanistan have emphasized that intelligence and information operations represent significant weaknesses and require far greater attention from the Department's leadership both in the long- and short-term.

The experiences gained in both Afghanistan and Iraq have also demonstrated that the services need to change their traditional view of the role of junior officers and NCOs. The most competent junior officers have shown extraordinary abilities in adapting to the complex, ambiguous, and uncertain challenges that SSTR operations have presented. The Department needs to utilize their newly acquired skills to the fullest if it is to prepare itself for future challenges.

There are many good things that are happening in the Department's transformational efforts as a result of the combat experiences of U.S. forces in Iraq and Afghanistan. However, much more remains to be done if the U.S. military is to cope successfully with future contingencies.

Current SSTR operations have indicated that enhanced small unit performance is critical to success in force protection. What happens on the tactical level often has strategic implications. It is the business of commanders at senior levels – not to mention the Pentagon's bureaucracy – to ensure that tactical troops have the support they need. And, it is even more important that the services and the Department translate the lessons of the present into the capabilities of the future.

Protecting the force is not only, or even mainly, about defensive measures. Instead, force protection in the kinds of missions the U.S. military will likely confront in the 21st century will depend on an offensive mindset, information, unpredictability, and winning the

trust, hearts and minds of the local population, as well as defensive measures. One division commander emphasized that providing services (SWET) was his most effective force protection measure. In such circumstances, to paraphrase a chart from the National Training Center, money, food, water, medicine, employment, recognition, and respect are all ammunition (and armor). Ultimately, effective force protection depends on all these types of actions guided by realistic objectives and sound strategy.

Above all, the U.S. military and its components must become learning organizations in the truest sense of that concept. A learning organization continuously monitors and objectively assesses its own and its adversaries' performance, and devises and rapidly implements new approaches when old ones will no longer work. To do this DoD must:

- Become better at tactical intelligence
- Provide more rapid sharing of knowledge and lessons (horizontal at least as important as vertical)
- Enable rapid insertion of new capabilities (both TTPs and technologies)
- Tie training closely to what is being learned in the field (it appears that this is being done)
- Tie experiments more closely to ongoing operations
- Put the experience and knowledge of operators to best use in their next assignments

Attributes of a learning organization are reflected by the rapid adaptation of training capabilities by the Army and Marines to the new missions. On the other hand, the Department's experience of the past four years with information operations is not suggestive of an effective learning organization.

THE COMPRESSION OF STRATEGIC, OPERATIONAL, AND TACTICAL LEVELS IN SSTR OPERATIONS

STRATEGIC ENVIRONMENT

Addressing the problems of force protection demands a realistic understanding of the current world environment, as well as the prospects for instability in the future. If the past is any indicator, getting the strategy right has always allowed for corrections at the operational and tactical levels. On the other hand, getting the strategy wrong has resulted in defeat, no matter how brilliant the tactical and operational expertise.

In addressing the future threat environment, there are a number of assessments that bear on the issues involved in force protection that can provide a framework for thinking about the problem. The rise of a peer competitor is one of the possible major challenges to American security over the coming century. In terms of a potential peer competitor, one great question mark on the horizon is China. The China that emerges from the economic explosion occurring at present on the Asian mainland will depend on how effective the diplomatic, economic, and social policies of the United States and its Asian allies are in persuading China's leaders that they have more to gain from cooperation than confrontation.

While the rise of a peer competitor challenge to U.S. security is a possibility, a strong case can be made that the great challenge for both the First World and the United States in the foreseeable future will be that of an unstable and tumultuous Middle East, where the political ramifications of U.S. actions in Afghanistan and Iraq are just emerging. The Middle East will retain its economic and political significance as long as oil continues as the major engine of the First World. Moreover, the Islamic world, particularly its Arab lands, continues to deal with globalization issues driven by political and

scientific developments that took the west over nine centuries to create – and that adaptation only began in the 1920s.

If that were not difficult enough, the Middle East possesses deep tribal, religious, and political divisions. Imams; ideological modernizers such as the Ba'ath; tribes, with conflicts reaching back centuries; Sunni fanatics; Shi'a revolutionaries; and the Druze, among others, all contest for significant roles in the Arab world.

Exacerbating these tensions, a population explosion throughout much of the Arab world has created a huge bulge of young men, a significant number of whom, unemployed and encouraged by religious fanaticism in the mosques, find religious fundamentalism attractive. While only a relatively small percentage of those will turn to active participation in violence, the patterns of history suggest that such population bulges of young men often translate into civil unrest leading to revolution or war. The likelihood is that whatever the fates of Bin Laden and Zarqawi, these masses will provide a flow of recruits from which Islamic Jihadists can draw. The implications for future conflict and consequently force protection are immense, because they suggest that U.S. forces will remain engaged at various levels for the foreseeable future.

These internal conflicts and the challenges of adapting to the threat and promise of the global world will all help continue the political turmoil within the Middle East – most of which will be unpredictable and difficult to assess as to its possible impact on American interests. The First World will be able to exercise only partial influence over the endemic conflicts and troubles within the Arab and Islamic worlds. Nevertheless, there will be times when intervention – military or otherwise – will be required. Furthermore, as American experiences with the Taliban in Afghanistan underlined, the intervention of U.S. military power can occur in unexpected places.

Thus, future American interventions in the region are likely, in large part because what happens in places like Somalia and

Afghanistan will impact on the world of the United States and its allies. These wars and operations in which the U.S. military will be involved will be characterized by a combination of religious and cultural conflict at their heart. Any United States intervention then could prompt deep suspicion, at times bordering on hostility, of America's intentions.

Thus, most of the wars and military interventions of the 21st century will be cultural and religious conflicts. Knowledge of the enemy's cultural and religious drives will represent an essential element in the success or failure of American efforts. The kinds of conflicts and interventions that America's armed forces will confront will require even better trained and educated junior officer and NCO levels, who have so far demonstrated an ability to adapt to new circumstances in the current conflicts in Iraq and Afghanistan. Such wars will also require a more coherent educational preparation for future military leaders.

OPERATIONAL ENVIRONMENT

As Operation Iraqi Freedom underlined, U.S. military forces possess unmatched capabilities at the operational level of war. However, what the U.S. experience in Afghanistan and Iraq has reiterated is that simple military intervention – pure military operations – will represent only the first step. Any approach to operational level of war must always keep in mind that the only reason to wage war is to achieve political goals, and the achieving of those goals must include coherent and effective SSTR and counterinsurgency operations, as well as the direct military purpose of destroying the enemy's military forces.

During the Second World War, the Anglo-American powers prepared extensively for the post-conflict phases in both Europe and the Pacific. The long-term, post-conflict policies developed during the war and put in place over the period from the end of the war to the mid-1950s, helped seal the victory that military forces had achieved from 1939 to 1945. As the 2004 Defense Science Board (DSB) summer study highlighted, future interventions will require carefully

*THE COMPRESSION OF STRATEGIC, OPERATIONAL,
AND TACTICAL LEVELS IN SSTR OPERATIONS*

developed and articulated plans and tools for long-term efforts, created well in advance of potential hostilities or state failures, to establish more effective governance in areas where the United States intervenes.

Thus, history suggests that pre and post-conflict stability and counterinsurgency operations demand the same attention to detail and understanding of human nature and the political context as do major combat operations. Moreover, the post-conflict and major combat operations need to be fully integrated including preparation to stand up indigenous military and police forces that can nip insurgent activities at the earliest stage meanwhile aggressively attending to root causes that incubate insurgency.

It is no stretch to consider major combat to be a shaping operation for the longer and more expensive follow-on decisive operations to win the peace. In the largest sense this requires a long-term focus on the political and strategic aims for which U.S. forces are conducting military operations, as well as on the more immediate military problem of defeating enemy military forces. Force protection must play a major role in all of this.

The military leaders of U.S. forces will have to understand not only their own cultural, political and economic framework, but those of others. They will have to be familiar and at ease with people who have very different attitudes and come from different cultures. Above all, they will need to develop a sixth sense – what the Germans call Fingerspitzengefühl – as to when things are right on the street or in the conference room and when they are wrong. They will have to entrust and empower their subordinates to make decisions in a world of uncertainty and ambiguity. Technology will be a major enabler, but it cannot, and will not, replace the crucial importance of the ability of Soldiers and Marines to make decisions based on a deep understanding and knowledge of local conditions.

In many respects, the increasing level of jointness in U.S. military operations has resulted in a considerable improvement in capabilities

at the operational level. However, the ground-centric nature of SSTR operations will demand changes to the training and intellectual preparation of Navy and Air Force officers if they are to be effective participants in joint task force headquarters conducting these types of operations.

THE TACTICAL ENVIRONMENT

The events over the past two years have underlined that U.S. forces are likely to confront opponents who will attack them with raids, ambushes, improvised explosive devices, car bombs, snipers, mortars, and other means that maximize their potential to hide among the people, while minimizing the technological and tactical advantages that Americans possess.

Traditional defensive measures are insufficient to deal with these challenges. Hunkering down cedes the initiative to the enemy and will largely undermine the ability of U.S. forces to interface successfully with the population in order to understand their needs, gather intelligence, and, above all, shape local opinion.

An aggressive posture in force protection will pay off in the long run in terms of nipping troubles in the bud and preventing the enemy from embedding itself within local society. Force protection must begin with the ability of U.S. forces to establish a relationship with the local community while denying the enemy such access.

If the United States is to achieve its political objectives, force protection must involve taking the war to the enemy and away from the local populace with all the physical and psychological means possible. The panoply of traditional tactics, such as snipers, aggressive patrolling, and counter ambushes, must be employed in constant and unpredictable patterns. Mixed in with these small unit tactics to cover U.S. forces must be a cultural awareness of the nature and proclivities of both the enemy and the local population. Above all, commanders down to squad level must recognize that their tactical actions can have political and strategic consequences.

In the end, force protection at the tactical level must recognize the intertwining of military means and actions with political goals and actions. In this regard, one of the significant weaknesses that was identified all too often in reviews of recent operations has been the difficulties in providing commanders at the local level with the funding authority and the decision tools to choose among competing demands to execute projects of direct interest to the locals. As the 2004 DSB summer study suggested, "Money is ammunition," and in the case of force protection "money is armor." The ability to provide the resources to carry out projects of benefit to the locals may be one of the most important tools in a tactical commander's toolbox for establishing the access and prestige necessary to gain links to local community leaders. There are training implications here.

Yet, no matter how effective their forces may prove in the tactical and operational sense, political and military leaders must never forget that counterinsurgency forces have only won in the past by their ability to build up indigenous forces capable of standing on their own, tactically and operationally, against the insurgents. In the end, U.S. military forces cannot expect to "win." Their mission must be to establish a framework within which the local military and police forces are able to swim in the sea of the populace and remove the medium that supports the bacilli of guerrillas and terrorists. Given the potential inadequacies in local forces, U.S. forces must display patience and forbearance based on knowledge and understanding of the local culture. As T.E. Lawrence observed in *The Seven Pillars of Wisdom*, in regard to training the Arabs who overthrew Ottoman control over much of the Middle East: "Better the Arabs do it tolerably, than you do it perfectly."

There is a larger point here. The tactical environment of force protection involves far more than the combat aspects of protecting U.S. forces. Crucial to success at the tactical level of force protection will be the ability of U.S. forces on the ground to influence and shape the local population in order to undermine the ability of the enemy to exist within the sea of the population. Engagement and relationship building, as well as the handover of relationships established to

follow on U.S. forces, will represent key components in creating a safe tactical environment. Without an understanding of the evolving needs of the local population and the creation of effective means of meeting those increasing expectations over time, all the while communicating with them, U.S. forces will remain literally in the dark.

Handing over tactical relationships built up with the local population to follow-on tactical units must form a crucial piece in the puzzle of handling the insurgency at the tactical level. Those U.S. forces, which have occupied areas for significant periods, must have the time to pass the relationships they have built up to those who replace them in terms of normal troop rotations.

If there is one message that the Department's leadership should take away from U.S. experiences in Afghanistan and Iraq, it is that small units and their leaders represent strategic assets and should be resourced accordingly. That is the fundamental lesson of what has happened and continues to happen on the sharp end. The United States may not possess enough of the right means it will need to deal with future operational environments. A renewed emphasis on the training and preparation of such units would represent a clear recognition of the kinds of military challenges the United States is likely to confront in the 21st century.

THE TRAINING REGIME

Current U.S. experiences in Afghanistan and Iraq have underlined the effectiveness of small unit leaders, officers as well as NCOs. In this respect two factors have come into play. First has been the success of the current training regime in preparing junior leaders to address the challenges of conventional combat. A significant success story of U.S. operations in Iraq has been the adaptability of those small unit leaders to the actual political and cultural conditions they have confronted. In every respect they have lived up to what history has suggested about the competence and skill of U.S. Soldiers and Marines.

Nevertheless, the task force believes the Department needs to improve the skills and effectiveness of those required to meet the challenges of the "strategic corporal" in the 21st century. Perhaps, the one area where the Department can have the most immediate effect in preparing to meet both present and future missions lies in the training of small units and the development of junior officers and NCOs. In the current protracted operations, training can have a significant impact sooner than any of other elements of DOTMLPF.

Over the past several decades training has been a powerful asymmetric advantage possessed by U.S. forces. A training revolution, first initiated by the Air Force and Navy for aerial combat, was applied to land combat by the Army beginning in the late 1970s. That revolution involved the use of large training facilities, explicit conditions and standards, world class OPFOR, the use of observer/controllers, and, above all, open, honest critiques. Such training efforts, which soon included the Marine Corps, resulted in leaders and forces acquainted with the vagaries of major conventional operations. The results were plain to see in the devastating victories over Iraqi armed forces in 1991 and 2003.

Since then, training capabilities have largely focused on the upper levels of command and high intensity fighting. Since the focus of the JRTC has been light infantry operations, it has been an exception to

the emphasis on high intensity combat. Nevertheless, the overall training emphasis in the Army has been at the high end, while its units have primarily found themselves in counterinsurgency, peacekeeping, and SSTR operations over the past decade and a half. What is needed to meet the challenges of lower-end missions that the task force believes will be the primary focus of U.S. military operations in coming decades is a second training revolution.

Such a training revolution would preserve the strengths of the first training revolution. It would also solidify and build on the adaptation already ongoing at the NTC, the JRTC, and 29 Palms. The task force was impressed by how these centers have adapted to the new challenges, including those of force protection. Such adaptations need to remain in place even after the current conflict in Iraq finally terminates. In addition, the Army, in particular, might well consider major alterations in its emphasis on Battle Command Training Program to include a broader range of environments that will confront U.S. forces in the future. Moreover, computer-based simulations rarely lend themselves to the kind of ambiguities and uncertainties that characterize wars against insurgencies.

Thus, the Department needs to push for a number of significant changes in the regimen of training its ground forces. In effect, this would result in a second training revolution.

An essential ingredient of a second training revolution is greatly enhanced home station training. The quality of home station training – bringing training to the unit – would be elevated to that of a Combat Training Center (CTC), with an emphasis on accelerating the maturation of junior officer/NCO training and leader development. Enhanced home station training would entail creative and increased use of deployable training teams, distance learning, and virtual synthetic environments.

The centralized training capabilities also warrant attention and more resources to carry on the changes they are already making and fulfill plans for new capability. There is much to be done. Two of the more pressing needs are (1) finding ways to measure combined

kinetic and non-kinetic operations and (2) providing more realistic urban environments.

There has been a much-needed proliferation of urban-type environments at these training facilities. There were seven "Iraqi" villages at the NTC populated by role-playing Americans of Arab descent when the task force visited it. Just a few years before there were none. However, the villages at all the training sites typically are small, consisting of no more than several dozen structures. In the case of the Marines' use of former Air Force installations (George and March in California) for urban training, they were not representative of likely real world urban environments. Urban training environments of sufficient size and diversity are urgently needed to "swallow" a battalion and more realistically challenge the unit with the disruptive effects of urban terrain.

There should be greater attention to and emphasis on civilian environments. Cultural, linguistic, religious, and tribal factors must be more realistically included in the training regimen wherever it occurs.

The combination of superior home-station training and enhancements at the centralized training facilities can steepen the learning curve of units deploying to theater. Thus, it would provide some of the learning that is now done on the job in much more deadly environments.

Conventional infantry forces are made more like Special Operations Forces by increasing their ability to operate independently and use language and cultural awareness as force multipliers. Doing this implies longer periods of initial training of recruits for the infantry. The British spend two and a half times longer in initial training of an infantryman.

**Recommendation 1:
Training, Leader Development,
and Professional Military Education**

- **Make training, leader development, and PME (with special attention to Junior Officers and NCOs) much higher priority elements of force transformation.** This will involve substantially more resources for training and will demand that senior OSD and Joint Staff officials work closely with Service Chiefs to develop and execute plans. Training and PME generally have not competed well with the acquisition community for dollars. The addition of several hundreds of millions of dollars to enhance training is one of the highest payoff investments that DoD can make to protect the force in SSTR and counterinsurgency operations. Targets for such investment (some of which is already underway, especially in the Army and Marine Corps) include:
 - **Recognize the strategic importance of combat-experienced junior officers and NCOs as agents of change, and assign them accordingly.**
 - **Expand and accelerate efforts to bring CTC-class training standards to units at their home stations.** This would involve the creation of deployable training teams, mobile simulators (for unconventional warfare small unit training), and greater exploitation of tools for distance learning. As part of this effort, create a major initiative to develop simulation tools and synthetic environments to support home-station training and junior officer leader development. Provide continual enrichment to these tools and environments by incorporating lessons learned and experiences from returning junior officers and NCOs.
 - **Accelerate and expand the adaptation ongoing at the NTC, JRTC, and 29 Palms. There is much to be done to provide:**

THE TRAINING REGIME

- Ways to assess combined kinetic and non-kinetic operations, together with metrics,
- Enhanced instrumentation,
- World class counterinsurgency OPFOR,
- More extensive and realistic populace play,
- More insertion of new technology/capabilities into training regimens,
- Greater capability to support training elsewhere including in-theater,
- Training rotations as an opportunity to facilitate unit transitions and handover,
- Learning of basic language skills,
- More opportunities for joint training, and
- More involvement of other U.S. Government agencies, international partners, and non-government organizations (NGOs).
- **Greatly expand training environs for urban operations.**
 - Create urban training environments (physical, infrastructure, cultural, adversarial) large enough to “swallow” a battalion.

PROFESSIONAL MILITARY EDUCATION

A weakness that appeared in the initial months of post-conflict operations was the lack of intellectual preparation that some senior and mid-level military leaders displayed in addressing the initial challenges that the Sunni insurgency represented. Thus, too many senior officers failed to recognize the evolving nature of the conflict in which U.S. forces were engaged. As a battalion commander noted at the end of his year's tour of duty during this period:

Too many leaders (both civilian and military) positioned at operational headquarters or in strategic executive branch positions were excessively involved in what was happening in tactical units at the expense of developing a long-term strategy and operational concept to implement it... There was little conception of the operational art at CJTF-7. Units initially occupied zones that transcended local government boundaries... Military units were more or less distributed evenly across Iraq, even though it soon became apparent that the heart of the insurgency lay in the Sunni Triangle... Shortage of forces, lack of vision, or lack of will prevented a more permanent presence in the area and an effective plan to deal with Fallujah until after it had become a symbol for the insurgency.³

PME has been the stepchild of service and joint efforts to prepare senior military leaders for the positions of commanders and senior staff positions since the Second World War. There is some irony in this state of affairs, because PME played a major role in the success of American military efforts in that conflict. Admittedly, there are some bright spots – such as the second year programs at the Army, Marine, and Air Force staff colleges, the Naval War College, and the advanced Strategic Arts Program at the Army War College – where serious intellectual preparation of officers to address the operational and strategic issues confronting the United States and its military is occurring. Nevertheless, a pervasive attitude towards professional military education appears to be that officers deserve a rest in their busy careers.

The clearest formulation of what PME should do was enunciated by Admiral Stansfield Turner, who carried out an educational revolution at the Naval War College in the early 1970s:

War colleges are places to educate the senior officer corps in the larger military and strategic issues that confront America in the late twentieth century. They should educate these officers by a demanding intellectual curriculum to think in wider terms than their busy operational careers have thus far demanded. Above all the war colleges should broaden the intellectual and military horizons of the officers who attend, so that they

3. Battalion commander's email to the authors.

have a conception of the larger strategic and operational issues that confront our military and our nation.⁴

The problem today is even more direct and challenging, as the United States confronts the cultural wars of coming decades, rather than the monolithic and inflexible Soviet Union. The nature of that security challenge demands a more intellectually demanding education of officers – a PME system that should start at the beginning of an officer's career. Moreover, it does not appear that an officers' performance at staff or war college becomes a major determinant in consideration of his or her suitability for promotion.

In the 1970s, the Army made a considerable effort to provide graduate educational opportunities to its brightest officers. Such opportunities have slowly but steadily decreased over the intervening decades (until a very recent modest increase). Perhaps emblematic of that decline is that China's People's Liberation Army may have more of its officers in the graduate schools of American universities than does the American military (an observation based on data that is several years old).

The challenges of the 21st century demand more thoroughly educated, culturally attuned officers in command positions. The Department is making a start in the right direction with its demand that graduates of the military academies and those on ROTC scholarship attain higher levels of proficiency in foreign languages. Nevertheless, this represents only a first step. The Department and the services need to reform the personnel systems so that more fast track officers have the opportunity – as did the current combatant commander of Central Command – to attend the most prestigious graduate schools in the world to obtain master's degrees and doctorates in subjects like military history, area studies, languages, and cultural studies.

Perhaps the most important step in improving the ability of future leaders to understand the broader issues involved in force protection

4. Admiral Stansfield Turner, quoted in Williamson Murray, "Grading the War Colleges," *The National Interest*, Winter 1986/1987.

lies in the provision of greater exposure to other cultures and other nations early in their careers. Additional opportunities for advisory tours, exchange tours, and foreign study, all would serve to provide future leaders with the skills to recognize the cultural gulfs and historical frameworks that they and their subordinates are confronting. None of this will be easy, and it will most probably demand a rethinking of the military career with an emphasis on more officers serving thirty years than is currently the case.

The Department and the services are also going to have to think of PME and the exposures described above as an integral part of an officer's career. It is an enabler that begins when future officers are still in college and continues through every year of their career until they leave the military. There must be a distinct break with the traditional belief that PME only occurs at the staff and war colleges. If the American military are to rise to the larger challenges involved in force protection, while operating within foreign societies and cultures, major changes are in order.

Cultural Understanding

Real cultural understanding represents a major challenge for the American military. But it is a challenge that must be met. The success in meeting it will depend to a considerable extent on the willingness and ability of the Department to emphasize skills and knowledge, which it can only obtain through a major overhaul of the system of professional military education and changes in the training regimes. In other words there must not only be an emphasis on cultural understanding and awareness, but a real symbiosis between experience, training and education. Only by such a redesign can learning in the school house connect to experiences in the real world.

Junior officers and NCOs, with accumulating experience in theater, can have a real impact on the training that units and leaders receive. It appears that this is beginning to happen at the training centers. Nevertheless, it is worth recalling that during the Vietnam War, a number of divisions had to establish their own individual training programs because training of basic soldiers in the United States was so unrealistic and out of touch with what was really

happening on the battlefield. A disconnect between the training base and the cultural realities that Soldiers and Marines confront while deployed will inevitably have a disastrous impact on the ability of U.S. forces to deal with the larger issues of force protection.

It is especially important that when the fighting in Afghanistan and in Iraq winds down the Department must maintain a major emphasis on cultural awareness in its training efforts as an essential ingredient in force protection. As the task force suggested above in the section on the most probable strategic environment, the United States will soon again find itself drawn into the maelstrom of the Middle East. The cultural experience gained at such cost over the past four years must not be allowed to atrophy for whatever reason. U.S. forces and leaders must have a better sense of the political, cultural and economic framework as an integral part of force protection than they did in 2001.

Recommendation 1:
Training, Leader Development,
and Professional Military Education

- **Reinvigorate the role of PME in developing more thoroughly educated and culturally attuned officers in command positions.**
 - Insure that officers on the fast track to command positions have the opportunity for exposure to other cultures early in their careers through advisory tours, exchange tours, and foreign study.
 - Provide more opportunities for advanced degrees in area and cultural studies, languages, and military history at the most prestigious universities in the world and ensure that such study is considered "career enhancing" by promotion boards.
- **Task the services and JFCOM to provide a plan in six months detailing the improvements and means needed to underwrite a second education and training revolution accounting for joint full spectrum operations (combat, counterinsurgency, SSTR, peacekeeping, and humanitarian presence).**

INFORMATION OPERATIONS

Broadly defined, information operations represent one of the most important attributes of force protection in both current and future military efforts. To turn Mao's famous aphorism around, not only the guerrilla, but the Soldier and the Marine as well must swim in the sea of the populace if they are to achieve mission objectives. Information operations create the atmosphere within which successful SSTR operations can take place. But that will occur only if those in charge of IO possess an understanding of both the medium and the message. At present in the Department, not to mention the U.S. government, such an understanding falls far short of what is needed.

"Information operations" is a term dating at least back to 1996 whose application is still evolving to meet the changing dynamics of the battlespace as well as the maturing understanding of information tactics and techniques.

Joint doctrine defines IO as:

Actions taken to affect adversary information and information systems while defending one's own information and information systems. This broad category is then further subdivided into either offensive or defensive information operations.

A more recent document, approved by the Secretary of Defense, defines IO as:

The integrated employment of the core capabilities of Electronic Warfare, Computer Network Operations, Psychological Operations, Military Deception, and Operations Security, in concert with specified supporting and related capabilities, to influence, disrupt, corrupt or usurp adversarial human and automated decision-making while protecting our own.⁵

Common to both definitions is the focus on the *adversary*. However, over the last decade the U.S. military forces have been

5. Department of Defense Information Operations Roadmap, 30 October 2003.

involved in a variety of operations on battlefields that contained enemy, friendlies and "others" – categories that are ill defined at best and changeable more like a kaleidoscope than a telescope. On such battlefields, the above definitions seem far too narrow. A form of operation so weakly defined does not invite a clear concept against which organizations and resources can be easily generated.

Public affairs is directed at U.S. audiences. Public diplomacy is engaging, informing, and influencing key international audiences while IO targets the adversary. All three terms fall short of describing the diversity of audiences U.S. troops routinely have encountered in settings as varied as the Horn of Africa, the Balkans, Central Asia, and the Middle East. Local populations in such areas can be divided into at least four groups: (1) those with malevolent intent, (2) those who shelter and support in one way or another the insurgents, (3) fence-sitters, who are not overly hostile, but need to be won over, and (4) those who are favorably disposed to the presence of U.S. and coalition forces and who will, on occasion, help.

In SSTR operations, IO is clearly needed to thwart and perhaps even change the behavior patterns of the first two groups. Nevertheless, it is obvious that the need is just as great, if not greater, to influence the latter two groups, because, while they are not adversaries or enemies of the United States, the clear aim of the insurgents is to convert them into enemies of the United States, or at the least intimidate them into not cooperating with U.S. and coalition forces.

IO, public diplomacy, and public affairs demand coherent, consistent messages, which rest on the same philosophical, ideological, and political principles and track over long periods of time. Bumper stickers and slogans are inadequate to influence the minds of those struggling to meet the challenges raised by the influx of Western ideas into societies that are far removed from the ideals of Western liberal democracy. A lack of coherence in IO undermines U.S. efforts at force protection – thus endangering the lives of U.S. forces.

Neither IO, nor public diplomacy, nor public affairs fully corresponds to the needs of the forces in the field. In October 2004, the Chairman of the Joint Chiefs of Staff approved the following definition of strategic communications⁶:

Strategic Communications: The transmission of integrated and coordinated USG themes and messages that advance U.S. interests and policies through a synchronized interagency effort supported by Public Diplomacy, Public Affairs, and Military Information Operations, in concert with other political, economic, information, and military actions.

The U.S. Soldiers and Marines on the ground daily are conducting strategic communications. Soldiers and Marines represent the face of America on much of the "Arab street." In a real sense they represent "influence" to the locals. As a young marine NCO commented in an after-action report: "I am tired of being told every Marine is an intel collector. I am also a transmitter. We need better guidance on the message we should be sending."

Regardless of which term is used, or how it is defined, there is a need to improve the capability of commanders at all levels to conduct "influence operations," a term this task force uses where the target audience is the local population. A recent article by a Marine Corps officer and veteran of IO in several theaters puts it this way:

To ensure that the tactical user has something to grasp, paraphrasing the definition as "influencing the way someone thinks" stays within the spirit of the definition no matter how much it changes.⁷

However, current definitions of IO and current policy and doctrine don't adequately account for the critical effect of American troops, who are in continuous contact with the indigenous population. DoD must do a much better job of addressing the capabilities and needs of these most public of public "diplomats."

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6. The DSB 2004 Summer Study on Transition to and From Hostilities found Strategic Communication to be "in crisis" and in urgent need of transformation.
 7. Lieutenant Colonel Joseph F. Paschall, USMC, "IO for Joe: Applying Strategic IO at the Tactical Level" in Field Artillery magazine, July-August 2005, pp. 25-29.

Commanders have had to invent the necessary capabilities on the fly. One example comes from the experience of the 1st Cavalry Division during its year in the greater Baghdad area. The division organized an IO/Non-Kinetic Operations staff of about 40 people and informed their work with polling feedback gathered by a combination of translators (organic and contractor) and people provided by the University of Baghdad.

An example of the evolving notion of what is IO is the following division-level description of its IO objectives in Baghdad:

IO will focus on influencing the Baghdad population to choose progress and prosperity over violence and hostilities as a means to achieve their best interests.

This will be accomplished by leveraging the successes of each line of operation. Support of the government and Multi-National Force Baghdad will be achieved by leveraging division and line of operation-specific Iraqi spokesmen to publicize these improvements to the citizens of Baghdad. Support for [the] election[s] will be maintained by informing the populace of [the] purpose for [the] upcoming elections to prevent distrust related to false expectations of the purpose of the January elections.

Compare the above approach to the official definitions for information operations, which focus on influencing the adversary. Instead, the division targeted the citizens of Baghdad, most of who were not "adversaries," but who nevertheless were going to prove critical to the success of the January 2005 elections.

The task force heard from a number of returning Marine and Army veterans of the counterinsurgency efforts in Iraq, the limitations of current definitions, doctrine, expertise, training, and experimentation. The concerns include the following:

- IO in both the pre- and post-major conflict period were limited by outdated broadcast technology, lack of education and exposure of our psychological operations (PSYOP) and IO force to modern media techniques, a lack of imaginative messages that were more closely linked to the operations themselves, and a self-defeating bureaucratic process that

- resulted in messages that were “vanilla” in impact and overtaken-by-events by the time they were delivered.
- The IO process was too time consuming, required “message approval” at too high a staff level – even for the most mundane local efforts, and failed to capitalize on the most modern advertising and media techniques (especially those related to political campaign advertising) that allow significant message turnaround in less than 12 hours.

The skill sets needed to identify and influence friendly and neutral foreign audiences are largely different from those needed for IO directed against the adversary. The exception is PSYOPS, but PSYOPS is a limited commodity. The typical local commander had little access to influence operations experts. There are too few such experts on the battlefield and they tended to be located at a relatively high organization level not available to the lower level commander when and where needed. Because of the strategic consequences of tactical actions in these types of operations, the current structure for IO is daily challenged to align IO capabilities with the relatively lower level leaders who need them.

It is also important that the lower level combat leaders have a better understanding of what capabilities to pursue and how to use them in a variety of situations. Training and the development and dissemination of best practices have major roles to play here.

During its visits to the NTC, 29 Palms, and the JRTC, the task force found the lessons learned in overseas theaters being imparted to units being trained for overseas deployment. Training activities indicate new emphasis being given to “influence operations.” The Army and Marine Corps both use the term “non-kinetic operations,” and both emphasize the contributions of non-kinetic “influence operations” during force preparations for deployment. During the task force’s visits to the JRTC and NTC, members observed “Arab

"villages" manned by role-playing Americans with Arab backgrounds mimicking circumstances in Iraq.⁸

A major challenge in training is to combine kinetic and non-kinetic operations and establish metrics (what to measure) and ways to measure performance of these non-kinetic operations. This is attempted in Iraq with polling and at the major training sites with qualitative human interpretation of after-the-fact results. The training establishment is struggling with but has not yet found the non-kinetic equivalent of instrumentation and ground truth so critical to the After-Action Review learning process.

Technology has begun to paint a somewhat different face on influence operations. While personal connection is still a strong means of influencing, the proliferation of television and radio in nearly all of the third world has driven the PSYOPS community to ratchet up its pace and sophistication in themes and preparation of materials. Again, there is a gap between the capabilities of the professional PYSONS officer and the ground commander. Commanders with recent experience in Iraq told the task force of the need for rapid turnaround of materials to exploit situations that emerge and the need for such materials in a sophisticated, often digital form.

There are some clear civil affairs lessons that have been learned (or relearned) in our most recent operations. The effectiveness of construction projects in any host nation is magnified if the construction team is composed of primarily host nation personnel. Providing SWET services are viewed by commanders as important a force multiplier as any form of combat organization or hardware. The ability to provide the resources to carry out projects of interest to the locals may be one of the most important tools in the local commander's toolbox that can provide him or her the access and respect necessary to gain links to leaders in the community. The importance of funds available at tactical levels is emphasized in the

8. The task force understands that such an environment has been also created at 29 Palms since the task force's visit there.

recent DoD Directive 3000.05 on Military Support for Stability, Security, Transition and Reconstruction (SSTR) Operations.

Additional complexity attends mission assignments. IO, as formally defined, is a mission assigned to U.S. Strategic Command. However, the task force did not find the DoD organization with the mandate to develop the capabilities needed by the tactical units to identify non-adversary audiences and develop specific themes and messages to inform them, motivate them, persuade them, and move them to action in support of U.S. strategic objectives.

In conclusion, the goals of influence operations are to disadvantage the enemy, influence the undecided population, reassure friends, and sustain the momentum of U.S. efforts. The following notions are central to understanding what is needed for the U.S. military to become much better at influencing operations:

- Top-down clearly articulated goals, themes and messages are needed.
- The capabilities of the IO “professionals” (specialists) do not always reach the lower levels of the combat force that need their skills.
- Technological advances have raised the levels of sophistication required in both the substance and means of distribution needed in development of influencing materials.
- There are IO successes at the tactical level that need to be captured as best practices and shared with a wider audience.
- The Soldier and Marine are powerful tools to influence others on the battlefield but must be better equipped with cultural and language skills.

Influence operations are too pervasive a tool to be left to specialists – it must be taught and emphasized in leader development, training and education. There are officers and NCOs with the right kind of experience, to help address the shortfalls in influence capabilities. This task force believes that it would be useful for the Secretary of Defense to select an experienced land force general officer to lead a task force that would examine current IO/strategic communications and develop clear-cut and workable

definitions and concepts, which would reflect the human dimension (troops on the ground), and much needed interfaces and synergies with public diplomacy and public affairs.

Recommendations 2 & 3: Information Operations

- Charter a fast-track team to address the serious problems that afflict U.S. attempts to conduct information/influence operations.
 - The team should recommend organizational, doctrinal, and operational changes to clarify definitions, responsibilities, purposes, missions, and assignments with particular emphasis on those information operations conducted by U.S. forces in theater largely directed at the local populace.
 - Appoint an OIF-experienced and successful land force commander as the team leader with a civilian deputy from Public Affairs. Include in the task force hand-picked officers and NCOs with diverse influence/IO experience, commanders who have successfully integrated these operations into a larger campaign and experts from the private sector. Interim results should be available within 60 days and final report in 120 days.
- Rapidly implement section 5.5.2 of DoD Directive 3000.05 on Military Support for Stability, Security, Transition, and Reconstruction (SSTR) Operations since money is ammunition: “Institutionalize procedures to achieve rapid distribution of funding, goods, and services, with appropriate accountability safeguards, by U.S. commanders deployed in foreign countries in support of stability operations.”

TACTICAL INTELLIGENCE AND RED TEAMING

Tactical intelligence is a vital contributor to force protection in the current tactical environment and will remain so in future environments. There will be critical roles for sensors and other technical intelligence assets, particularly if they can approach the goals of persistent surveillance and tracking. However, the task force believes that HUMINT will continue to be the most important contributor to tactical intelligence in the cultural and religious conflicts of the future. Building relationships with the local populace is the most important contributor to gaining tactical intelligence in the circumstances confronting U.S. forces. Everyone is a collector, not just an intelligence officer and civil affairs. Thus, knowledge of the local culture and language skills represent crucial enablers to the building of relationships required to gain information.

Once again this task force looks to training, leader development, and PME to provide the leverage in this area, especially in terms of the preparation of junior officers. Pattern recognition and link analysis – part of the current training regime – offer opportunities for technology enablers. It will be those on the scene who will connect the cultural dots and understand what actions need to be taken. Without that recognition, especially transmitted up the chain of command, force protection will remain a chimera, in which the approach of concertina wire and Fortress Apaches will remain the mainstay of force protection efforts – a dead end.

The work being done by the Army's INSCOM to enhance the collection and value of tactical intelligence particularly impressed the task force. That organization is pursuing three complementary thrusts to:

1. Provide analysts with easier access to multi-INT, without having to know specifically what to ask for.
2. Provide analysts with a collaborative environment in which they can share knowledge, not just data.

3. Push process to the lowest levels, to make intelligence more accessible to those working at lower levels.

The Department should support these efforts at INSCOM enthusiastically with resources and accelerate the fielding of the capabilities it develops.

Perhaps one of the most important steps that the Department and the services can take in light of the experiences that U.S. forces have gained in operations in both Afghanistan and Iraq is an increased focus on serious red teaming. By "red teaming," the task force means the creation of a culturally based opponent, who thinks in a fundamentally different fashion from how Americans think. At every level such red teams must possess the background and understanding of the "other," especially his culture, religion, and history. When done right it will help anticipate initiatives and responses by adversary groups and the reactions of the uncommitted populace and thus complement evidentiary-based intelligence.

However, finding appropriate personnel is a major challenge. The U.S. Army Training and Doctrine Command (TRADOC) recently established the University of Foreign Military and Cultural Studies at Fort Leavenworth, Kansas, to provide the education, training, and practical experience foundation to enable a force-wide red teaming capability.

Another challenge is providing sufficient independence for the red team, while still ensuring its products have ample opportunity to inform operational and investment decisions.⁹

The aim must not be just to provide a training opponent for U.S. forces, but rather to help in acculturating U.S. commanders, junior officers, and NCOs to the challenges they will confront in different cultural environments and within which they will have to operate. The results of the red teaming should also inform intelligence collection. In the age of the "strategic corporal," such red teaming can

9. A more complete discussion of the challenges of red teaming is provided in the report of the DSB Task Force on The Role and Status of DoD Red Teaming Activities (Sept, 2003).

begin the educational processes on which force protection must rely in the 21st century.

Recommendations 4 & 5: Tactical Intelligence and Red Teaming

- **Provide much easier access to intelligence at tactical levels (battalions and below).** Accelerate the efforts at the Army's INSCOM and elsewhere to provide this capability along with the collaborative environment that fosters sharing of information and knowledge. This environment must embrace the critical role of the lower tactical levels as collectors as well as customers of intelligence. These capabilities should be packaged into a joint tool set with the corresponding training support and be SIPRNET-compatible at tactical levels.
- **Establish aggressive red teaming** to emulate the cultural predilections, motivations, objectives, internal planning, technical and operational capabilities, and decision processes of potential adversary groups and uncommitted populace.
 - Embed the red teaming in a process wherein senior decision makers and commanders use its products to inform operations, inform investment decisions, operations and intelligence collection.
 - Consider extending to other DoD organizations the Army's recent initiative to develop more relevant and proficient red teamers.

Vice Chairman Joint Chiefs of Staff (VCJCS), Under Secretary of Defense Policy (USD [P]) and USD (AT&L) could be designated as leads.

RAPID LEARNING AND SHARING OF EXPERIENCE

A clear enabler of effective responses to the insurgency in Iraq and the adaptive approaches that the insurgents utilized was that Soldiers and Marines shared their experiences and thus were able to adapt to changes the enemy was making in his methods and tactics. Much of the most impressive sharing occurred in an ad hoc fashion within relatively small tactical units, which were able to cobble together procedures to pass tactical information back and forth among their members. Companycommand.com and platoonleader.org are examples of horizontal networking initiatives originally begun outside of formal channels.

An impressive example of networking within the chain of command was CAVNET, under the command of Major General Peter Chiarelli, and its use of DARPA's Command Post of the Future (CPOF). It appears that both of these initiatives have been picked up by other organizations, although the task force heard concerns about the future of CPOF. Such field-generated capabilities inevitably face legitimate concerns about future sustainability and the more bureaucratic "not invented here" reactions from acquisition communities

Regarding lessons learned, SSTR and counterinsurgency operations daily present new challenges to U.S. forces. There are adversaries who seem to change TTPs almost daily and U.S. forces must operate in complex, cultural, political, infrastructure and physical environments that vary greatly from location to location.

Unfortunately, bureaucratic systems of lessons learned merely feed combat reports and accounts of actions or encounters with insurgents back to staffs in the United States. All too often such processes appeared more attuned to collecting lessons than in providing the learning mechanisms that would help U.S. and coalition forces to deal more effectively with an adaptive enemy. Traditional lessons learned processes won't work here. New models are needed.

What is needed in the lessons learned arena appears to be less process and bureaucracy and more responsiveness to those in harm's way. The crucial element in all of this is that the focus on lessons learned must be involved within the theater of operations, supported by a responsive and robust reach back capability to additional analysts and experts.

Effective force protection depends on being able to capture and disseminate TTP best practices extremely rapidly among the lowest tactical levels. It also requires that lessons be promulgated rapidly to the highest levels in order to inform decisions on strategy, organization, training, technology initiatives and the like.

A new model for learning lessons will need to exploit the dramatic growth of *networking* at tactical levels. This is the essence of the power of network-centric ideas: network as a verb.

The JFCOM Lessons Learned for OIF approach used by embedded headquarters analysts engaged in ongoing operations also has applicability to the force protection challenge. In addition to capturing lessons on the spot, this group is able to reach back for help in resolving issues and, in some cases, turn lessons recorded into immediate remedial action.

Recommendation 6:
Rapid Learning and Sharing of Experience

- Evolve a new approach exploiting the networking innovations going on in the field, the considered assignments of military personnel returning from theater and the experience of JFCOM's OIF Lessons Learned activity. This will involve, *inter alia*:
 - Embedding more observers and analysts into ongoing operations at tactical levels, and
 - Creating integrated teams of warfighters, intelligence analysts, operational analysts, and technologists that can rapidly perform the operations analyses needed to help

turn observations (data) into lessons (knowledge) into actions (lessons learned).¹⁰

The verb evolve is chosen with care because the lessons learned process must itself be the subject of constant inquiry and adaptation. Making all this happen will require the Services, Regional Combatant Commands, JFCOM, OSD and the Joint Staff all working together.

10. The DSB Improvised Explosive Devices (IED) Task Force running in parallel with this task force provides a similar recommendation for such integrated teams.

THE ROLE FOR TECHNOLOGY

Over the past century technology has come to play an increasingly important role in conflict. Yet rarely in that period has technology provided the "silver bullet." At the end of the Second World War, the Germans possessed the only combat jet aircraft in the world, the best tanks, a revolutionary submarine, and the only ballistic and cruise missiles in existence. Ironically, in 1940 and 1941, three-quarters of the Wehrmacht's tank force was inferior to the armored fighting vehicles possessed by their opponents. Nevertheless, new technological capabilities can make a considerable difference particularly when complementing discipline, good training, a good understanding of the adversary's intelligent tactics, competent doctrinal conceptions, and first-rate campaign planning.

The extended nature of SSTR operations presents challenges and opportunities of inserting new technology-enabled capabilities directly into the operations. The challenge is that the introduction of technology must be closely integrated within new concepts, tactics, TTPs, and training. Current processes are not up to the task of providing timely insertion. The opportunity is that, properly used, technology can be a powerful enabler for new ways of conducting difficult operations.

Technology can also be a powerful enabler of another training revolution. Besides enhancing training at the combat training center (CTC), more significantly, technology can help bring CTC-like standards to training units at their home stations.

Examples of promising technologies include the following:

- Technologies that can reduce clutter and noise in extremely high clutter/noise environments, high endurance unmanned platforms, and advanced radio frequency/infrared/video sensors can all help enable persistent surveillance.
- Biometric technologies show promise, particularly close-up measures (e.g., fingerprints and retina scans) for identifying

individuals. Less mature are the use of remote, non-contact devices and techniques for use in both surveillance and interrogation. There are also promising approaches for field supportable rational biometric databases, which may ultimately be more important than the sensors and algorithms themselves.

- The integrated use of computers may have a high pay-off in a variety of applications: synthetic environments and simulation, distance learning and training, pattern recognition and link analyses to support tactical intelligence, and data mining to generate cultural profiles by region. Inexpensive and easily distributed technologies to capture and analyze the results of field tests and training exercises, as well as lessons learned from individuals at all levels returning from the field would also be of considerable use, as was underscored during the task force's visit to the NTC.
- Significant enhancement of the performance of language translators could be a great boon to the "strategic corporal." The task force heard from Soldiers and Marines that the performance of current devices is mixed at the very best.

Nevertheless, it is important to remember that the most effective force protection measure in Iraq has been constructive "engagement" with the local population. This view was underscored by virtually all of the recently returned brigade and battalion commanders who discussed their personal "lessons learned" with the task force. Many technologies, however, have tended to create barriers between U.S. military personnel and the local population, especially individual passive technologies (e.g., body and vehicle armor, protective glasses, etc.). In that sense, they may be counterproductive in certain settings. The most important technologies will be those that can bridge the gap between protection and defacto isolation.

Recommendations 7 & 8: The Role of Technology

- Initiate a major technology effort aimed at breakthrough enhancements to training and leader development with special attention to junior officers and NCOs, home-station training and non-kinetic operations. (Build on efforts currently underway in DARPA and the services).
- Provide for more rapid insertion of new capabilities to include language translators into the field by inserting more prototypes into unit rotational training and by establishing a prototyping capability – with operational analysis and system engineering support – at the operational commands.

USD (AT&L) and USD (Personnel & Readiness) should work closely with the Services and Combatant Commands to make these happen.

JOINT URBAN OPERATIONS ACTIVITY AT JOINT FORCES COMMAND

The JUOA is doing a good job within the parameters of its original organizational design. The members of the task force were particularly impressed with the tools developed for the Urban Resolve experiment and JFCOM's efforts to extend the utility of these experimental tools to mission rehearsal, training, and operational opportunities.

However, the security situation has changed substantially since the JUOA was conceived and created. When the Department assigned the joint urban operations responsibility to JFCOM, within the services there was still considerable opposition to the idea that U.S. forces would ever again have to engage an enemy in major cities. Events in Iraq have ended such speculation in a decisive fashion. Moreover, the fighting in Iraq in cities like Fallujah and Ramadi has provided direct experience and lessons that no exercises or training under peacetime conditions could possibly emulate.

The art of urban operations is evolving too fast, too far away for a traditional executive agent role to be effective. Furthermore, in order that JUOA serve as an effective steward of a JUO master plan, a significant increase in their staff and resources would be required. It is therefore an appropriate time to reassess the executive agent role as originally envisioned for JFCOM. It is no longer necessary to have an advocate for the importance of urban operations.

An alternative to JUOA being "in charge" of a comprehensive master plan is have the JUOA be the advocate and executor for a few important needs.

**Recommendation 9:
Joint Urban Operations Activity at Joint Forces Command**

- Focus JFCOM's Joint Urban Operations Office on just a few needs rather than attempt to create and oversee a **comprehensive master plan**. The task force suggests that the most important of these activities should be:
 - Strengthening the vertical dimension of urban operations (and making them more joint) by orchestrating substantially increased contribution from the Air Force and Navy,
 - Developing and promulgating lessons from junior officers (working closely with the service lessons learned activities), and
 - Sponsoring a few major JUO training/experiment events a year.

CONCLUSION

The task force believes that the extensive combat experiences in Iraq and Afghanistan have provided an invaluable basis for improving and expanding the capabilities of U.S. forces in the force protection arena. The first step towards improving the Department's abilities in this arena must be a major effort to insure that the lessons learned thus far in those conflicts are not unlearned in the day-to-day hustle and bustle of "peacetime" soldiering. Moreover, the Department must insure that the young officers and NCOs, who have gained such extensive experiences in these two "three-block wars," are not stifled. Bureaucracies at stateside installations sometimes do not recognize the extraordinary capacity for initiative that they have already displayed in combating the insurgents in Iraq and Afghanistan. The needs of the coming wars, their complexity, and their potential length all demand a far higher emphasis on rigorous PME to prepare officers and NCOs for the challenges they will confront. Significantly, General George Marshall felt that the greatest mistake he had made in the Second World War had been to close down the staff and war colleges.

Secondly, the Department needs to focus on recognizing that force protection must involve issues that are far wider than concertina wire and bunkers. Force protection needs to become a way of thinking far beyond direct, passive measures. Force protection must involve the recognition that the achievement of political goals will inevitably require military forces that possess the cultural, linguistic, and historical understanding to work successfully with the population. It also demands intelligence capabilities in which technology is only an enabler to support those who are culturally attuned to the world in which the insurgent and the guerrilla live; it is only that knowledge that can effectively turn the information gained by technology into intelligence. Above all, it requires the ability to project a coherent and effective political message that not only reaches, but affects its target audience.

Lastly, counterinsurgency and SSTR operations put great demands on small units and their leaders. A great strength of America's operational forces is the services' junior officers and NCOs. The thrust of the task force's recommendations is to make them better prepared and give them better tools to meet the challenges of the future security environment.

The substantive recommendations of this task force represent changes in the Department's thinking and culture, which is no easy task. Yet, given the very considerable differences in the challenges that the American military will confront in the 21st century from what its forces confronted in the last century, it would seem that such an effort is essential to the well being of this great nation. The enemy is already gathering in places where America's most sophisticated capabilities are increasingly irrelevant.

CONCLUSION

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APPENDIX A. TERMS OF REFERENCE

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ACQUISITION,
TECHNOLOGY
AND LOGISTICS

THE UNDER SECRETARY OF DEFENSE

3010 DEFENSE PENTAGON
WASHINGTON, DC 20301-3010

September 21, 2004

MEMORANDUM FOR CHAIRMAN, DEFENSE SCIENCE BOARD

SUBJECT: Terms of Reference—Defense Science Board Task Force on Force Protection in Urban and Unconventional Environments

You are requested to initiate a Defense Science Board Task Force to review and evaluate force protection capabilities in urban and unconventional environments and provide recommendations to effect change to the future Joint Force. The Task Force's foci should be to evaluate force protection in the context of post major combat operations that have been conducted in Iraq and Afghanistan. In these operations, loss of national treasure - military and civilian, U.S. and other nations - has resulted from actions executed by non-state and rogue actors. The threat and capabilities these insurgent, terrorist and criminal actions present pose a most serious challenge to our ability to achieve unified action.

The Task Force should consider the following issues and context in its approach to provide recommendations to effect change:

- a. Approaches to provide force protection and security that work well for traditional combat missions will require adaptation and may be much less applicable when civil-military operations are required to achieve objectives.
- b. Relevant experiences of other countries (e.g., UK with Northern Ireland, Israel with the Palestinians, Russia with Chechnya, Australia with East Timor) as well as UN operations in dealing with rogue and non-state actors.
- c. Relevant experiences and capabilities of civilian agencies and the reserve components typically employed in peacekeeping, peace enforcement and law enforcement roles.
- d. How operational art may be adapted to thwart adversary asymmetric advantages.

The Task Force is requested to accomplish the following objectives

- a. Leverage the following reference documents as context for the study and provide insight into the future security challenges the Joint Force



and its interagency and multinational partners may face in urban and unconventional environments:

- o Joint Operations Concepts (JOpsC), dated November 2003
 - o An Evolving Joint Perspective: US Joint Warfare and Crisis Resolution in the 21st Century, dated 28 Jan 03
 - o Protection Joint Functional Concept, dated 31 December 2003
 - o The Joint Operational Environment--Into the Future, Coordinating Draft dated 5 March 2004
- b. Evaluate the root causes of injuries, mortality, and morbidity of troops and personnel in post major combat operations.
 - c. Review current efforts, Improvised Explosive Device (IED) Defeat Integrated Process Team and others, to negate the effects of IEDs, rocket propelled grenades and other lethal means employed by insurgent forces in standoff and close quarters tactics.
 - d. Review and evaluate on-going Joint Urban Operations (JUO) initiatives to determine how well they are synchronized with the projection of the future security environment. In addition, assess JUO initiatives for specific emerging capabilities associated with force protection.
 - e. Review and evaluate current efforts in Intelligence, Surveillance & Reconnaissance to determine how well they support specific force protection needs.
 - f. Evaluate campaign objectives in post major combat operations and consider what operational and functional capabilities are needed to provide an asymmetrical advantage to protect the Joint Force.
 - g. Review the interaction between Strategic Communications in support of campaign objectives and force protection considerations.
 - h. Recommend technological and operational art changes across all of the critical considerations of DOTMLPF + Policy that can potentially be implemented to improve the security and protection of military and civilian personnel conducting post major combat operations to achieve campaign and strategic objectives.
 - i. Request the Task Force provide its insights in the format of "short shots" of problem, recommended solution(s) and rationale. Incremental feedback as well as a final report is desired.

The study will be sponsored by me as the Acting Under Secretary of Defense (Acquisition, Technology and Logistics), the Chairman of the Joint Chiefs of

Staff, and the Director, Defense Research and Engineering. Dr. Ted Gold and GEN Bill Hartzog, USA (Ret.) will serve as co-Chairmen of the Task Force. LtCol Chris Bargery will serve as the Executive Secretary and LTC Scott Dolgoff, USA will serve as the Defense Science Board Secretariat Representative.

The Task Force will be operated in accordance with the provisions of PL 92-462, the "Federal Advisory Committee Act" and DOD Directive 5104.5, "DoD Federal Advisory Committee Management Program." It is not anticipated that this Task Force will need to go into any "particular matters" within the meaning of section 208 of Title 18 U.S. Code nor will it cause any member to be placed in the position of acting as a procurement official.

Robert M Suga
FOR
MICHAEL W WYNNE

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APPENDIX B. TASK FORCE MEMBERSHIP

Co-Chairmen

Dr. Theodore Gold
GEN William Hartzog, USA (Ret) *Burdesaw Associates, Inc.*

TASK FORCE MEMBERS

Dr. Joseph Braddock	<i>U.S. Naval Academy</i>
Dr. Delores Etter*	<i>Defense Group Inc.</i>
Dr. Bryan Gabbard	<i>Rolls-Royce</i>
LtGen Earl Hailston, USMC (Ret.)	<i>Institute for Defense Analyses</i>
Dr. William Hurley	<i>Lockheed Martin Integrated Systems & Solutions</i>
Maj Gen Kenneth Israel, USAF (Ret.)	<i>Institute for Defense Analyses</i>
Dr. Williamson Murray	<i>Hicks and Associates, Center for Adaptive Strategies and Threats</i>
LTG Charles Otstott, USA (Ret.)	<i>Colgen, Inc.</i>
Mr. John Sandoz	<i>Anteon Corp.</i>
MG Robert Scales, USA (Ret.)	<i>LMI</i>
RDML Thomas Steffens, USN (Ret.)	
Mr. Robert Stein*	
Gen Michael Williams, USMC (Ret.)	
Mr. Daniel Winegrad	

**Co-Chairs of DSB IED Task Force*

EXECUTIVE SECRETARY

Mr. Todd Chappell *Joint Staff J-3*

DSB REPRESENTATIVE

LTC Scott Dolgoff, USA

GOVERNMENT ADVISORS

Col Lyle Armel, USMC	<i>USMC Readiness Branch</i>
COL Edward Martin, USA	<i>Joint IED Defeat Task Force</i>
Dr. Robert Popp	<i>DARPA</i>
Mr. Doug Richardson	<i>U.S. Special Operations</i>

APPENDIX B. TASK FORCE MEMBERSHIP

Mr. Ben Riley
LTC Richard Scheels, USA
Dr. Gordon Spencer

CDR Joseph Spivey, USN
Col Michael Vendzules, USAF

Command
OUSD (AT&L)
TRADOC
National Ground Intelligence
Center
JFCOM
USAF Force Protection Battlelab

STAFF

Ms. Julie Evans

Strategic Analysis, Inc.

APPENDIX C. BRIEFINGS, DISCUSSIONS AND VISITS

<i>U.S. Army's Asymmetric Warfare Group-threats, capability gaps, and efforts to close those gaps</i>	LTC Hammon, USA
<i>Army leader development for stabilization and reconstruction. Discussion on cultural awareness, IO integration, case study methodology, college battle rhythm, and The Center for Army Tactics (CTAC) irregular initiatives. In addition, the panel discussed internal challenges, including obtaining feedback from the field, limited time, and maintaining faculty currency.</i>	Mr. Chuck Zaruba Mr. Cary Mr. Hadfield Mr. Crumrine Mr. Thaden Mr. Gerling Lt. Col Hodges Via VTC - U.S. Army Command and General Staff College (CGSC), Fort Leavenworth
<i>British Perspective on Force Protection</i>	BGen Johnny Torrens-Spence Col James Murray-Playfair LTC Bob Bruce
<i>Cold War Historical Perspective</i>	Dr. Joe Braddock
<i>Combating Terrorism Technology Task Force</i>	Mr. Ben Riley
<i>Counterintelligence, HUMINT, and Force Protection</i>	COL Dave Summers, USA
<i>Discussion: Counter-Ideology</i>	COL Michael Shalak J-5
<i>Discussion on his experience in the Middle East (as a former SEAL and liaison with Egyptians during Desert One) with the task force. He also discussed his civilian work experience with Blackwater Security and the Weapons of Mass Destruction Commission.</i>	Capt Patrick Toohey, USMC (Ret)
<i>Experience in Iraq/public affairs/strategic communications strategy.</i>	BG Vincent Brooks, USA
<i>The Future of Urban Warfare Training</i>	MajGen Tom Jones, USMC Commanding General TECOM

APPENDIX C. BRIEFINGS, DISCUSSIONS AND VISITS

<ul style="list-style-type: none">- Command, Control, Communications, and Computers/Lessons Learned/Fires/Non-Lethal Weapons- Training Strategies- Intelligence, Surveillance, and Reconnaissance- Science and Technology/Models and Simulations- Joint Concept Development and Experimentation- Way Ahead		Joint Urban Operations Center
IED CONOPS Brief		Lt Col Kenny Volmert, USAF
Israeli Perspective on Force Protection in counter-insurgency operations		BG Yaakov Ayish, Commander Armour Brigade (Reserves) Col. David Ovadia, Head of Land Systems Division Col. Yoav Zacks, R&D Attaché, Embassy of Israel
<i>Law Enforcement Community Perspective: Panel Discussion. Each member spoke about his/her experience in law enforcement. In particular, they discussed community relations, non-traditional threats and how to cope with them at the local level, and their experiences with radical Islam.</i>		Chief Kitzrow, Portsmouth VA Mr. Charles Prouty, Former FBI SAC for the Boston area Major Jerry Burke, MA State Police Dr. Kathleen Kiernan, former Deputy Director of Bureau of Alcohol, Firearms, and Tobacco Mr. Martin Mahon, DC Police Mr. Dennis Fasian, ATF Intel Analyst
Learning to Eat Soup With A Knife: Counterinsurgency Lessons From Vietnam And Iraq		LTC John Nagl, USA
Former OIF Brigade/Battalion Commanders Panel		COL David Teebles, USA COL Kevin Stramara, USA LTC Hugh Van Roosen, USA
OIF Command Perspective- discussion on his experience commanding a Regimental Combat Team in the al Anbar Region.		Col John Toolan, USMC
OIF Command Perspective on force protection in the urban environment and the threat of improvised explosive devices (IED)		LtGen Jim Mattis, former 1st Mar Civ Cdr, currently CG of MCCDC

APPENDIX C. BRIEFINGS, DISCUSSIONS AND VISITS

<i>OIF Lessons Learned</i>	COL Mike Ryan, USA
<i>OIF Operational Perspective</i>	LtCol Bryan McCoy
<i>Operation OIF II and Force Protection</i>	LTG Thomas Metz, USA
<i>Perspective on Force Protection in Iraq</i>	Col Mike Linnington, Joint Chiefs of Staff, J8 and COL (Sel) Mark Calvert
<i>Psychological operations</i>	LTC Mike Layrisson, USA
<i>Red team expertise</i>	Mr. Frank Legasse DTRA
<i>Security Issues-Special Work and Travel for contractors</i>	Mr. Fred Demech Northrop Grumman
<i>SOCOM Brief current initiatives on force protection</i>	Col Paul Burke, USMC
<i>Stability and Support Operations (2d Bde Combat Team of the 101st Airborne Division (Air Assault) during OIF 1 SASO in Mosul, Iraq from May 03 to Feb 04)</i>	COL Joe Anderson, USA
<i>Status of the Joint IED Defeat Task Force</i>	COL Lamont Woody, USA
<i>Task Force 1041, Operation DESERT SAFESIDE</i>	Col Brad Spacy, USAF and LtCol Chris Bargery, USAF
<i>Discussion on Force Protection</i>	LtGen John Sattler, USMC
<i>Discussion on Force Protection</i>	GEN William Wallace, USA
<i>Thoughts on Force Protection: The Historical Parameters</i>	Dr. Wick Murray
<i>TRADOC: Overview of Convoy Protection Effort</i>	COL Ronald Isom, USA
<i>TRADOC: Overview of Capability Needs in Force Protection / Overview of Counter-Rocket, Artillery and Mortar Effort</i>	Mr. Steve West
<i>Training Transformation</i>	Dr. Paul Mayberry
<i>USMC Briefing- challenges and efforts to improve force protection in urban and unconventional environments</i>	Col Lyle Armel, USMC

APPENDIX C. BRIEFINGS, DISCUSSIONS AND VISITS

<i>INSCOM Overview, Fusion/Horizontal Integration</i>	Visit to INSCOM: MG John Kimmons, USA
<i>Tactical Overwatch/Force Protection IOC analytic & visualization Tools</i>	MAJ John Altman, Operations Officer, and Mr. Dan Yuill, Senior Analyst, IOC
<i>Project & Future Technologies</i>	Software Integration Laboratory Dr. James Heath, Senior Science Advisor to G-2 HQDA and CG INSCOM and Members of Future Directorate
<ul style="list-style-type: none">- Command Brief- Scenario brief- Discussion with Observer Controllers- Observe training with 29th BCT- Military Operations on Urbanized Terrain (MOUT) Brief/Tour	Visit to Joint Readiness Training Center
<ul style="list-style-type: none">- Discussion with Deputy Director- Signals Intelligence Directorate brief- Research Associate Directorate Support to IED- Information Assurance Directorate	Visit to National Security Agency
<ul style="list-style-type: none">- Roundtable of Battalion Commanders and Officers from units recently returned from Iraq. Focus on Lessons Learned. Each unit presents key lessons learned, focused on equipment shortfalls in theater, or equipment that worked well- Current, near future and far term MOUT capabilities at MAGTF-TC, to include potential integration of stability and support operations training, show Onyx CD- Observe training unit at MOUT	Visit to 29 Palms
<i>Observe the after action review process and discussion with leadership about what they are learning and how the lessons are being fed back into the system during rotation 05-11</i>	Visit to National Training Center, Ft. Irwin, CA

APPENDIX D. ACRONYMS

<i>CAVNET</i>	1st Cavalry Division Internet
<i>CPOF</i>	Command Post of the Future
<i>CTC</i>	Combat Training Center
<i>DARPA</i>	Defense Advanced Research Projects Agency
<i>DoD</i>	Department of Defense
<i>DOTMLPF</i>	Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities
<i>DSB</i>	Defense Science Board
<i>HUMINT</i>	Human Intelligence
<i>IED</i>	Improvised Explosive Devices
<i>INSCOM</i>	U.S. Army's Intelligence and Security Command
<i>IO</i>	Information Operations
<i>JFCOM</i>	Joint Forces Command
<i>JRTC</i>	Joint Readiness Training Center
<i>JUO</i>	Joint Urban Operations
<i>JUOA</i>	Joint Urban Operations Activity
<i>MOUT</i>	Military Operations on Urbanized Terrain
<i>NCO</i>	Non-Commissioned Officer
<i>NGO</i>	Non-government Organization
<i>NTC</i>	National Training Center
<i>OIF</i>	Operation Iraqi Freedom
<i>OPFOR</i>	Opposition forces
<i>OSD</i>	Office of the Secretary of Defense
<i>PME</i>	Professional Military Education
<i>PSYOPS</i>	Psychological Operations
<i>ROTC</i>	Reserve Officer Training Corps
<i>SSTR</i>	Stability, Security, Transition and Reconstruction
<i>SWET</i>	Sewer, Water, Electricity, Trash
<i>TRADOC</i>	U.S. Army Training and Doctrine Command
<i>TTP</i>	Tactics, Techniques and Procedures
<i>USD (AT&L)</i>	Under Secretary of Defense for Acquisition, Technology and Logistics
<i>USD (P)</i>	Under Secretary of Defense for Policy
<i>VCJCS</i>	Vice-Chairman, Joint Chiefs of Staff